Volume II **May 2002**

The Washington State Department of Health

1996-1998 Surveillance Report

Tobacco Use and Infant Exposure to Cigarette Smoke

Alcohol Use

Illegal Drug Use

Washington State Department of Health

1996-1998 Washington State Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report

May 2002

Community and Family Health

For additional information on Washington State PRAMS or for additional copies of the 1996-1998 Washington State PRAMS Surveillance Report – Volume II, please contact:

PRAMS Coordinator

Community and Family Health

P.O. Box 47835

Olympia, WA 98504-7835

(360) 236-3497

E-Mail: WAPRAMS@doh.wa.gov

Suggested Citation:

Eaglin, ME, Robbins, JM, Zaichkin J, and Pilkey, D. 1996-1998 Washington State PRAMS Surveillance Report -Volume II. Olympia, WA: Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 2002.

Acknowledgements

Margaret Eaglin, MPH
Jeanette Robbins, BA
Jeanette Zaichkin, RNC, MN

Diane Bailey, MN
Tom Bell, PhD
Sherilynn Casey, MPA
Isela Cooper
Linda Lohdefinck, BS
Diane Pilkey, MPH, RN
Polly Taylor, CNM, MPH, ARNP
Terese Vollan, BS, BA
Cathy Wasserman, PhD

Members of the:
Washington State Department of Health
Maternal and Child Health (MCH)
Infectious Disease and Reproductive Health (IDRH)
Center for Health Statistics (CHS)
Women, Infants, and Children (WIC)

Washington State Department of Social and Health Services
First Steps Database
Research and Data Analysis Division

Snohomish Health District
Health Statistics and Assessment Programs

Public Health -- Seattle and King County
Planning and Evaluation Unit

Funding for the PRAMS Program is provided in part by the Centers for Disease Control and Prevention Program, Atlanta, Georgia, (Grant Number: U50/CCU013484-06).

The Washington State PRAMS committee members would like to especially thank the Washington mothers who participated in the survey.

TABLE OF CONTENTS

4. Illegal Drug Use

5. Appendices

List of Data Tables and Figures

1. Introduction

Pages

2. Tobacco Use and Infant Exposure to Cigarette Smoke

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Smoking during Pregnancy

Ever Smoked at Least 100 Cigarettes in Life

Smoking Cigarettes in the Three Months before Pregnancy

Smoking Cigarettes in the Last Three Months of Pregnancy

Smoking Cigarettes at Postpartum

Infant Exposure to Cigarette Smoke

3. Alcohol Use

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Drinking during Pregnancy

Drinking Alcohol during the Three Months before Pregnancy

Drinking Five or More Alcoholic Drinks at One Sitting during the Three Months before Pregnancy

Drinking Alcohol during the Last Three Months of Pregnancy

4. Illegal Drug Use

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Illegal Drug Use

5. Appendices

Appendix B: Sampling and Weighting Process

Appendix C: Trend Data

Executive Summary

Since June of 1993, the Office of Maternal and Child Health (MCH), Washington State Department of Health (DOH) has been collecting Pregnancy Risk Assessment Monitoring System (PRAMS) data.[1] PRAMS is an ongoing, population-based surveillance system sponsored by the Centers for Disease Control and Prevention (CDC) and designed to generate state-specific data on maternal behaviors and experiences before, during, and after pregnancy among residents who delivered live-born infants.[2] We are pleased to present the second of four volumes of the 1996-1998 Washington State PRAMS surveillance report, a collection of PRAMS findings on various MCH indicators.

Volume Two of the 1996-1998 Washington State PRAMS Surveillance report provides information on MCH indicators relative to tobacco use and infant exposure to cigarette smoke, alcohol use, and illegal drug use. Subgroup analyses are stratified by selected maternal characteristics; results from these analyses are displayed in graphic and tabular form. For certain topics, 5-year trends are also presented.

The 1996-1998 Washington State PRAMS Surveillance Report was designed to serve as a descriptive review of the pregnancy and early postpartum experience of 6,034 women in Washington State who had live births from April 1996 through December 1998. The average response rate for this study period was approximately 70 percent, which is considered by PRAMS operational and technical staff at the CDC as a minimum threshold below which unacceptable response bias may occur. When a response rate drops below this threshold, state data are not included in national estimates. This report will also serve as a source of information for public health professionals and policy makers in developing and monitoring programs and policies designed to improve the health of mothers and children in Washington State.

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[2] Colley GB, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

Data Highlights

The following are findings on each of the three topic areas featured in Volume Two of the 1996-1998 Washington State PRAMS Surveillance Report:

Tobacco Use and Infant Exposure

- ❒ Approximately 80.7 percent of women said a prenatal health care provider discussed how smoking during pregnancy could affect their baby.
- ❒ An estimated 37.5 percent of women reported smoking at least 100 cigarettes during their entire life.
- ❒ Twenty-five percent of women reported smoking cigarettes in the three months before pregnancy.
- ❒ An estimated 12.3 percent of women reported smoking cigarettes in the last three months of pregnancy.
- ❒ Nearly 18 percent (17.8%) of women reported smoking cigarettes in the postpartum period.
- ❒ Six percent of women said their new baby was in the same room with someone who was smoking anytime during the day.

Alcohol Use

- ❒ Nearly 82 percent (81.8%) of women said a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby.
- ❒ Nearly half (46.3%) of the women said they consumed alcohol during the three months before pregnancy.
- ❒ An estimated 18.1 percent of women reported drinking five or more alcoholic drinks at one sitting during the three months before pregnancy.
- ❒ Around six percent (5.9%) of women said they consumed alcohol during the last three months of pregnancy.

Illegal Drug Use

- ❒ An estimated 71.3 percent of women said a prenatal health care provider discussed how using illegal drugs could affect their baby.

Introduction

The Pregnancy Risk Assessment Monitoring System (PRAMS) is part of the Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight.[1] PRAMS is an ongoing, population-based surveillance system administered by the Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion at the CDC in conjunction with various state programs.[2,3] In 1987, PRAMS was designed to identify and monitor selected self-reported maternal behaviors and experiences that occur before, during and after pregnancy and during the child's early infancy among a stratified sample of mothers delivering a live-born infant.[1,3] PRAMS was also designed to supplement vital records data and to generate state-specific data for developing and assessing Maternal and Child Health (MCH) programs on a state level.[3]

Since June of 1993, the Office of MCH within the Washington State Department of Health has been collecting PRAMS data. Each month, 1 in 40 births are randomly selected from the Washington State birth certificates. At two to six months postpartum, Washington State PRAMS sends a packet containing an explanatory letter and the PRAMS questionnaire to 100-250 sampled mothers. Ten days after the initial mailing, mothers are sent a reminder letter to serve as a thank you. Two weeks after the reminder letter, mothers who do not respond to the first mailing are sent a second mail questionnaire packet. Two weeks after the second mailing of the questionnaire, Washington State PRAMS staff contacts the mothers who do not respond to the mail survey and attempt to conduct telephone interviews in English or Spanish.[2,3]

In December of 1996, Washington State published the first PRAMS report that summarized information from mothers who delivered infants in Washington State from April 1993 through December 1994.[3] This current report is the second of four volumes of the 1996-1998 Washington State PRAMS Surveillance Report, a compilation of PRAMS data on MCH indicators on 6,034 randomly selected mothers who delivered live born infants in Washington State from April 1996 through December 1998. This sample represents a 70 percent response rate of 8,563 women surveyed during Phase III of the PRAMS survey. For additional information regarding the sampling plan for Washington State PRAMS, please refer to Appendix B.

Volume Two covers the following topics: tobacco use and infant exposure to cigarette smoke, alcohol use, and illegal drug use. This report includes the characteristics of the PRAMS sample population, response rates, data highlights, three narrative sections presenting the public health importance of each topic, prevalence estimates and subgroup analyses by selected maternal characteristics, and trends. An analysis of each survey question is presented in graphic and tabular form.

For this report, responses to the PRAMS questions are stratified by the following maternal characteristics obtained from the Washington State birth certificates: age at conception (<20, 20-24, 25-34, 35+ years), race/ethnicity (White/Other/Unknown, African American, Native

American, Asian/Pacific Islander, and Hispanic ethnicity), level of education at delivery (<12, 12, >12years), marital status at delivery (married, unmarried), and baby's birth weight (< 2500 grams, ≥ 2500 grams). Washington State PRAMS oversampled African Americans, Native Americans, Asian Pacific Islanders, and ethnic Hispanics to create (including whites) five strata. The purpose of oversampling was to increase the reliability of estimates for these minority groups. All women less than 20 years of age were grouped in the same strata due to insufficient numbers to support finer divisions of age groups delineation. The level of education was selected as a stratification variable, because it has been found to be an excellent surrogate for socio-economic status. Marital status is another important stratification variable, particularly with respect to pregnancy intentions.[2] Table 1.1 (pg. 8) provides the demographic characteristics of the Washington State resident birth mothers for all state births and PRAMS sample participates in this time period.

Information on whether Medicaid paid for prenatal care services for the mother and delivery of the infant was obtained from the linkage between the Washington State PRAMS data and the Washington State First Steps Database (maintained by the Department of Social and Health Services, Research and Data Analysis Division). Women who meet the Medicaid criteria were divided into three groups: Cash Assistance, Pre-First (FS) Medicaid Only, and First Steps Expansion. "Cash Assistance" is defined as very low-income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid. "Pre-First Steps (FS) Medicaid Only" is defined as low-income women (below 90% federal poverty level) eligible for Medicaid only. This group includes women not eligible for cash assistance. "First Steps Expansion" is defined as women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups. "Non-Medicaid recipients" are women not enrolled in Medicaid. For this report, responses to PRAMS questions were stratified by Medicaid total (Cash Assistance, Pre-First (FS) Medicaid Only, and First Steps Expansion) and Non-Medicaid. Information on Medicaid status involvement is important both as an indicator of poverty status and its many attendant health risks, and because the expansion of Medicaid funding for pregnant women in Washington State has been a major component of MCH policy.[2]

For some topics, responses to PRAMS questions are stratified by site of prenatal care visit (Hospital Clinic, Health Department Clinic, Private Doctor's Office, Military Facility Clinic, Community or Migrant Health Clinic, and Other Clinic). This information is obtained from mother's response to the PRAMS survey question: "Where did you go ***most of the time*** for the prenatal visits?"

All tables in the report were produced using weighted PRAMS data. Percentages and standard errors were calculated for the characteristic of interest using PROC CROSSTAB in SUDAAN.[3] The 95% Confidence Intervals (CIs) were computed using the formula CI = percentage + 1.96 * standard error. The sample size, reported in each table, is the number of mothers who answered the corresponding PRAMS question.

All missing (blank and "don't know") observations are excluded. The percentage of missing values is noted when it equals or exceeds 10 percent. Because estimates based on small sample size are imprecise and may be biased, estimates where the underlying number of respondents were fewer than 60 are noted in the table as "may not be reliable." Respondents fewer than 30 are not reported and are noted in the tables.

Further information on PRAMS can be found in the appendices. Appendix A describes the Washington State PRAMS data collection instrument and procedures. Appendix B explains the Washington State PRAMS sampling and weighting process. Appendix C displays the trend data for questions that were asked in Phase II (January 1994 through March 1996) and Phase III (April 1996 through December 1998) of the PRAMS questionnaire. Appendix D lists the topics for Volume I-IV, the states participating in PRAMS from April 1996 through December 1998, and the web sites to CDC, Washington State PRAMS, and Washington State Department of Health.

This report has been prepared by technical and program staff of the Office of MCH in the Community and Family Health Division at the Washington State Department of Health. It is hoped that the PRAMS data presented in this surveillance report can be used by public health professionals and policy makers to design and implement interventions and policies to improve the long-term health of the mother and children. In addition, this report may also assist in completing the requirements for Title V MCH Block Grant applications, as well as generating hypotheses to be explored in future studies.

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS) CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[2] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[3] Colley Gilbert B, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, G: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease and Prevention, 1999.

Table 1.1: Demographic Characteristics of Washington State Resident Birth Mothers

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	State Total	% State Total	WA PRAMS Total	WA PRAMS %Total[b]
Total[c]	217,205	100.0	6,034	100.0
Maternal Age				
<20 years	23,838	11.0	1,021	13.7
20-24 years	51,667	23.8	1,557	23.2
25-34 years	112,137	51.6	2,876	52.7
35+ years	29,474	13.6	579	10.4
Race/Ethnicity[d]				
White	157,471	72.5	1,410	74.9
African American	7,925	3.7	969	3.8
Native American	4,600	2.1	1,252	2.2
Asian/Pacific Islander	13,959	6.4	1,208	6.7
Hispanic	26,267	12.1	1,195	12.4
Maternal Education[e]				
<12 years	35,302	18.1	1,323	17.9
12 years	61,869	31.7	1,717	32.1
>12 years	98,002	50.2	2,331	49.9
Marital Status				
Married	157,168	72.4	3,842	72.7
Unmarried	59,527	27.4	2,181	27.3
Medicaid Status				
Medicaid[f]	90,319	41.8	3,201	40.3
Cash Assistance[g]	31,707	14.7	1,137	13.1
Pre-First Steps (FS) Medicaid Only[h]	23,875	16.1	1,266	16.5
First Steps Expansion[i]	34,689	11.0	798	10.8
Non-Medicaid[j]	125,865	58.2	2,817	59.7
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	12,207	5.6	355	5.0
Normal Birth Weight (≥2500 g)	204,422	94.4	5,664	95.0
Site of Prenatal Care Visit				
Hospital Clinic	-[k]	-[k]	1,594	19.9
Health Department Clinic	-[k]	-[k]	523	5.7
Private Doctor's Office	-[k]	-[k]	2,731	60.3
Military Facility	-[k]	-[k]	240	3.5
Community or Migrant Health Center	-[k]	-[k]	252	2.9
Other Clinic	-[k]	-[k]	530	7.7

[a] Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database. White includes other/unknown (3.5%).

[b] Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c] Refers to surveillance period from April 1996 through December 1998.

[d] Hispanic Ethnicity was missing on 3.2% of the Washingtron State birth certificates.

[e] 10% or more of the maternal education data are missing from birth certificate data.

[f] Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion

[g] Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

[h] Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

[i] First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

[j] Non-Medicaid - women not enrolled in Medicaid.

[k] Information not available from Washington State birth certificates.

TOBACCO USE AND INFANT EXPOSURE TO CIGARETTE SMOKE

WASHINGTON STATE PRAMS 1996-1998

Tobacco Use and Infant Exposure to Cigarette Smoke

The relationship between the effects of maternal smoking on reproductive health and pregnancy is well established. Tobacco use during pregnancy has been associated with a variety of adverse pregnancy outcomes, including lower fertility, spontaneous abortion, abruptio placenta, placenta previa, preterm delivery, low birth weight, small-for-gestational age, neurodevelopmental impairment, attention –deficit/hyperactivity disorder, inflammatory bowel disease, and strabismus.[1,2,3,4,5,6] However, the mechanism by which the toxic chemicals in cigarettes produce adverse fetal effects is not well known.[7] Maternal smoking during the postnatal period is associated with increased infant risk for lower respiratory illness, ear infection, reduced pulmonary function, and sudden infant death syndrome.[1,6,8,9]

The *Healthy People 2010 goal* for reported abstinence from cigarette smoking during pregnancy is 99 percent.[10] Washington State PRAMS data can be used to monitor progress on smoking cessation among pregnant women and to target programs to women most at risk for continued smoking during and after pregnancy.

References:

[1] Fried PA. Prenatal exposure to tobacco and marijuana: effects during pregnancy, infancy, and early childhood. Clin Obstet Gynecol 1993; 36:319-37.

[2] Andres RL. The association of cigarette smoking with placental previa and abrupto placenta. Semin Perinatol 1996;20:154-9.

[3] Hughes EG, Brennan B. Does cigarette smoke impair natural or assisted fecundity? Fertil Steril 1996;66:679-89.

[4] Lambers DS, Clark KE. The maternal and fetal physiologic effects of nicotine. Semin Perinatol 1996;20:115-26.

[5] Anderson H, Bland J, Peacock J. The effect of smoking on fetal growth. In: Poswillo D., Alberman E., eds. Effects of Smoking on the Fetus, Neonate, and Child. New York, NY: Oxford University Press Inc.:1992;8:89-105.

[6] Becker AB, et al. Breast-feeding and environmental tobacco smoke exposure. Arch Pediatr Adolesc Med 1999;153:689-691.

[7] Pollack H, Lantz PM, Fohna JG. Maternal smoking and adverse birth outcomes among singletons and twins. American Journal of Public Health 2000;90:395-400.

[8] Strauss RS. Effects of the intrauterine environment on childhood growth. Br Med Bull 1997;53:81-95.

[9] American Academy of Pediatrics Committee on Environmental Health. Environmental tobacco smoke: a hazard to children. Pediatrics 1997;99:639-42.

[10] U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington, DC: January 2000.

Survey Question #16:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below? **For each thing, circle Y (Yes) if someone talked with you about it or N (No) if no one talked with you about it.**

b. How smoking during pregnancy could affect your baby.

No (19.3%)

Yes (80.7%)

Summary of Results:

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Smoking during Pregnancy (Table 2.1 & Figure 2.1)

- Approximately 80.7 percent of women said a prenatal health care provider discussed how smoking during pregnancy could affect their baby. These women were more likely to be:
  - Teenagers
  - Women with less than a high school education
  - Unmarried
  - Medicaid recipients (specifically Pre-First Steps Medicaid Only)
  - Women with infants weighing less than 2500 grams at birth

- Hispanic women (90.9%) were more likely to report a prenatal health care provider discussed how smoking during pregnancy could effect their baby compared to White women (78.4%), Asian/Pacific Islander (80.9%), and Native American women (87.5%).
- The data shows that women who received prenatal health care services at a health department clinic (88.2%) were significantly more likely to report a prenatal care provider discussed with them about how smoking during pregnancy could affect their baby compared to those who went to a private doctor's office (76.9%).

Table 2.1: Women who reported a prenatal health care provider discussed how smoking during pregnancy could affect their baby

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,877)	Yes (n= 4,959)	% Yes[b] (%= 80.7)	95% CI (79.1-82.3)
Maternal Age				
<20 years	989	927	92.4	(89.5-95.3)
20-24 years	1,521	1,337	84.5	(81.4-87.6)
25-34 years	2,806	2,263	77.4	(75.0-79.8)
35+ years	560	431	73.2	(67.5-78.9)
Race/Ethnicity				
White	1,394	1,091	78.4	(76.2-80.6)
African American	946	827	87.7	(85.7-89.7)
Native American	1,215	1,055	87.5	(85.9-89.1)
Asian/Pacific Islander	1,155	927	80.9	(78.7-83.1)
Hispanic	1,167	1,059	90.9	(89.3-92.5)
Maternal Education[c]				
<12 years	1,275	1,179	90.2	(87.1-93.3)
12 years	1,670	1,454	81.9	(79.0-84.8)
>12 years	2,303	1,805	76.4	(73.9-78.9)
Marital Status				
Married	3,766	3,057	77.7	(75.7-79.7)
Unmarried	2,102	1,895	88.7	(86.2-91.2)
Medicaid Status				
Medicaid[d]	3,093	2,768	85.9	(83.5-88.3)
Cash Assistance[e]	1,096	990	87.8	(84.1-91.5)
Pre-First Steps (FS) Medicaid Only[f]	1,223	1,109	88.0	(84.7-91.3)
First Steps Expansion[g]	774	669	80.1	(75.2-85.0)
Non-Medicaid[h]	2,768	2,178	77.2	(74.8-79.6)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	335	297	89.7	(84.4-95.0)
Normal Birth Weight (≥2500 g)	5,529	4,650	80.2	(78.4-82.0)
Site of Prenatal Care Visit				
Hospital Clinic	1,582	1,394	86.3	(83.4-89.2)
Health Department Clinic	515	471	88.2	(83.1-93.3)
Private Doctor's Office	2,710	2,143	76.9	(74.5-79.3)
Military Facility	239	216	87.8	(80.4-95.2)
Community or Migrant Health Center	251	220	84.2	(76.6-91.8)
Other Clinic	521	465	85.2	(79.9-90.5)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; and prenatal care sites from PRAMS. Missing responses =157. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data are missing from birth certificate data.

[d]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

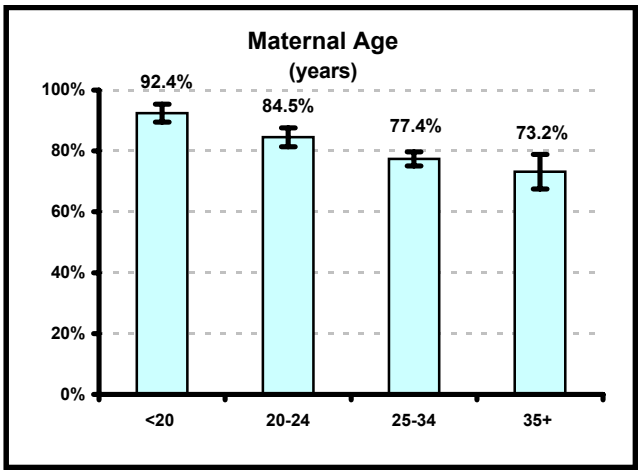
[e]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

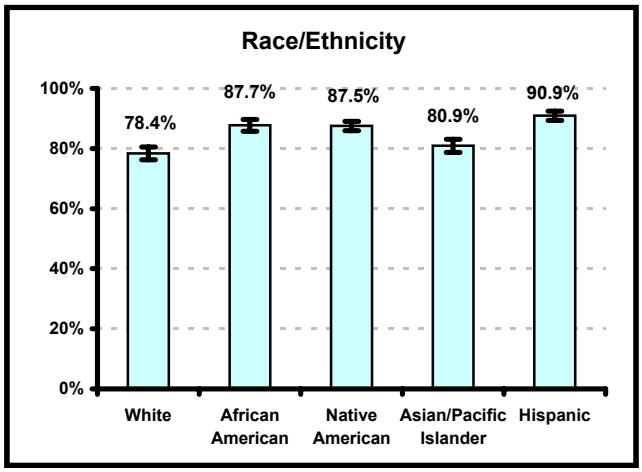
[f]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

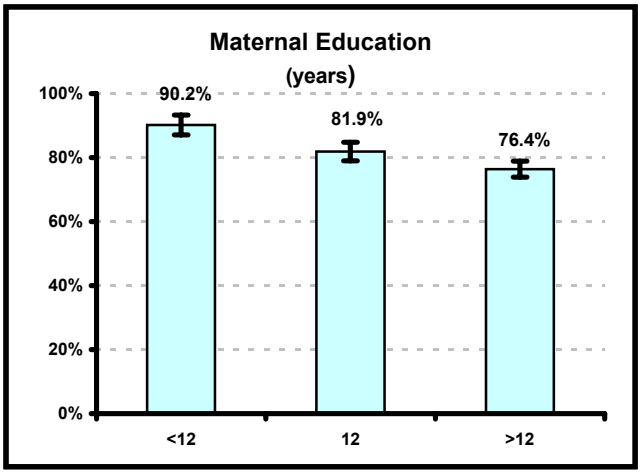
[g]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

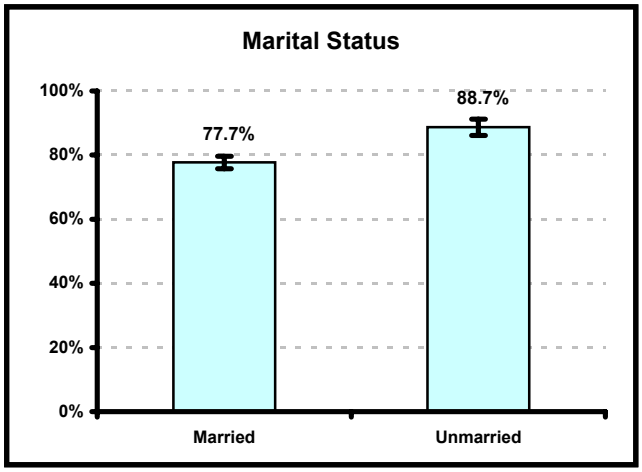
[h]Non-Medicaid - women not enrolled in Medicaid.

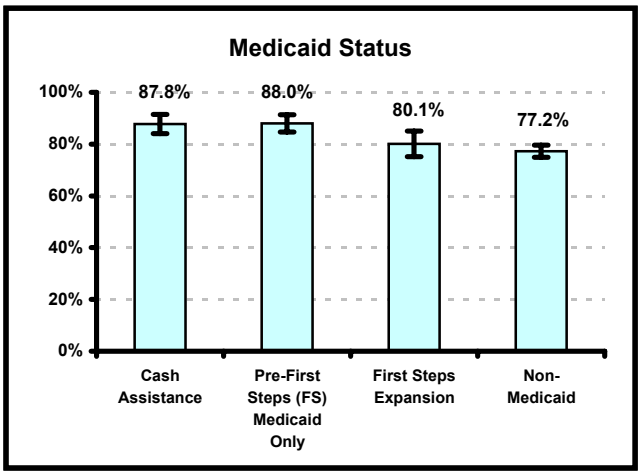
Figure 2.1: Women who reported a prenatal health care provider discussed how smoking during pregnancy could affect their baby
Washington State PRAMS 1996-1998











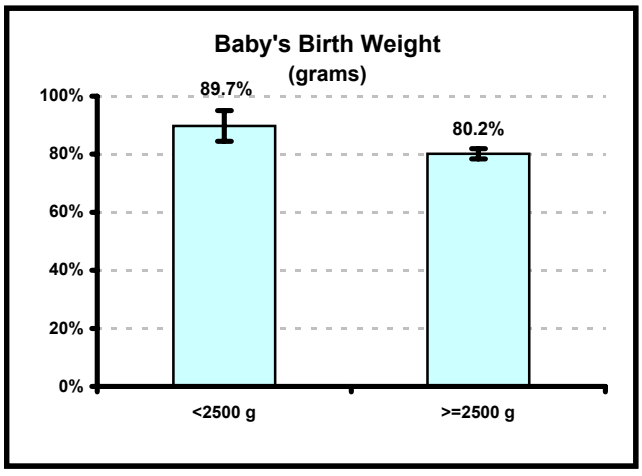
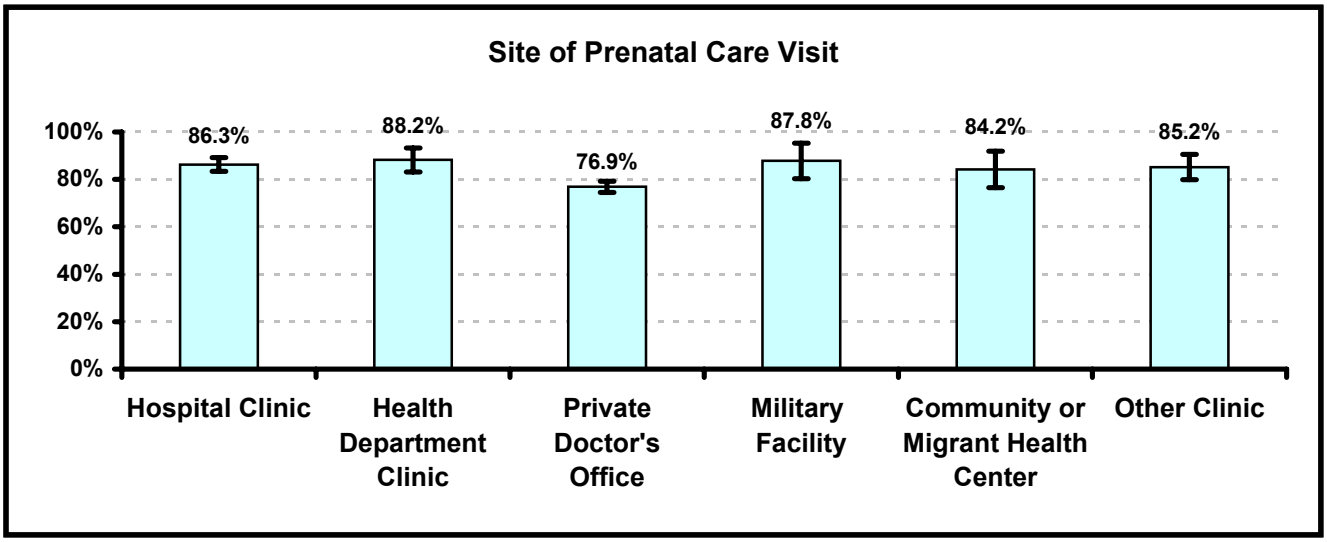


Figure 2.1 (cont'd): Women who reported a prenatal health care provider discussed how smoking during pregnancy could affect their baby
Washington State PRAMS 1996-1998



Survey Question #21:

Have you smoked at least 100 cigarettes in your entire life?

No (62.5%) → **Go to question #25**

Yes (37.5%)

Summary of Results:

Ever Smoked at Least 100 Cigarettes in Life (Table 2.2 & Figures 2.2)

- The proportion of women who reported smoking at least 100 cigarettes in their entire life was 37.5 percent. These women were more likely to be:
  - Native American
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance)

- Teenagers (51.3%) were significantly more likely to report smoking at least 100 cigarettes in their entire life compared to women aged 25 to 34 years (31.4%) and women aged 20 to 24 years (41.7%).
- Women who had a high school education (46.9%) were significantly more likely to have reported smoking at least 100 cigarettes in their entire life compared to those who were educated beyond high school (27.3%)
- There was no significant association between women who reported smoking at least 100 cigarettes in their entire life and the infant's birth weight status.

Table 2.2: Women who reported smoking at least 100 cigarettes in their entire life

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,998)	Yes (n= 2,049)	% Yes[b] (%= 37.5)	95% CI (35.5-39.5)
Maternal Age				
<20 years	1,016	436	51.3	(46.0-56.6)
20-24 years	1,548	583	41.7	(37.6-45.8)
25-34 years	2,856	822	31.4	(28.7-34.1)
35+ years	577	207	40.9	(34.8-47.0)
Race/Ethnicity				
White	1,407	580	42.1	(39.6-44.6)
African American	962	288	31.0	(28.1-33.9)
Native American	1,244	747	61.3	(58.9-63.7)
Asian/Pacific Islander	1,200	234	19.9	(17.7-22.1)
Hispanic	1,185	200	17.1	(14.9-19.3)
Maternal Education[c]				
<12 years	1,312	503	46.8	(42.1-51.5)
12 years	1,708	707	46.9	(43.2-50.6)
>12 years	2,325	626	27.3	(24.6-30.0)
Marital Status				
Married	3,821	1,002	30.8	(28.4-33.2)
Unmarried	2,166	1,041	55.2	(51.5-58.9)
Medicaid Status				
Medicaid[d]	3,178	1,269	44.9	(42.0-47.8)
Cash Assistance[e]	1,127	621	60.0	(54.7-65.3)
Pre-First Steps (FS) Medicaid Only[f]	1,256	432	42.0	(37.3-46.7)
First Steps Expansion[g]	795	216	30.9	(25.4-36.4)
Non-Medicaid[h]	2,804	771	32.4	(29.9-34.9)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	354	142	46.2	(37.2-55.2)
Normal Birth Weight (≥2500 g)	5,629	1,902	37.1	(35.1-39.1)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; and prenatal care sites from PRAMS. Missing responses =36. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data are missing from birth certificate data.

[d]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

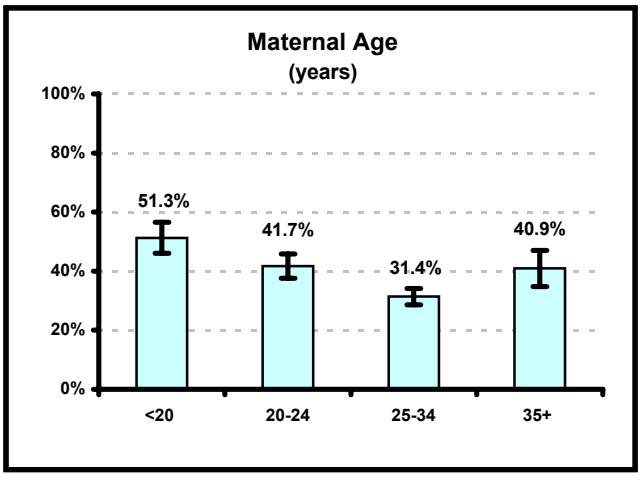
[e]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

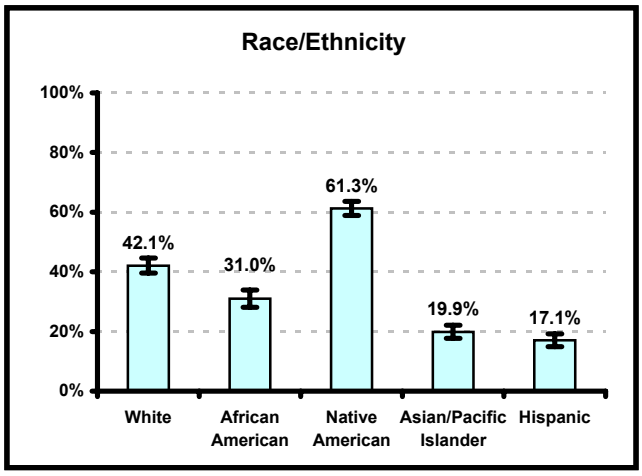
[f]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

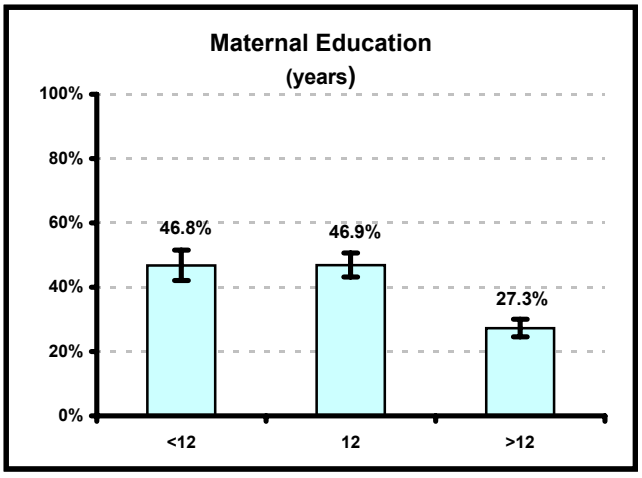
[g]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

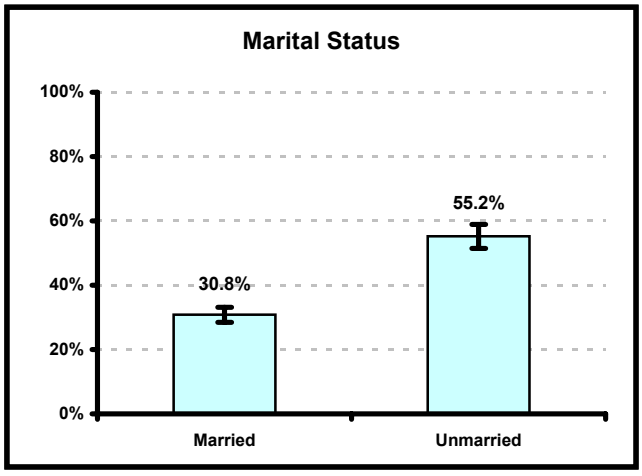
[h]Non-Medicaid - women not enrolled in Medicaid.

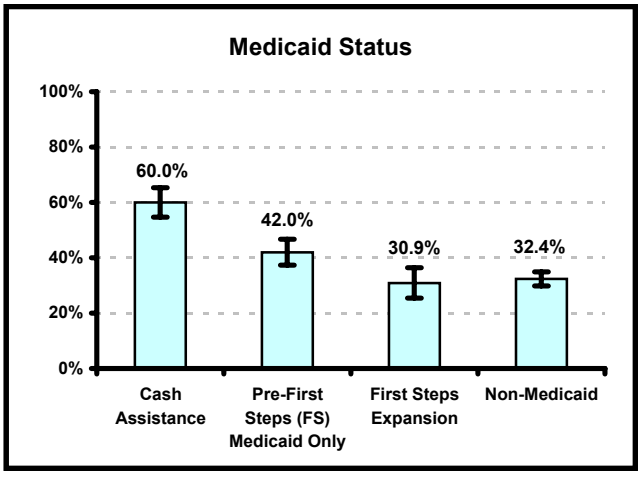
Figure 2.2: Women who reported smoking at least 100 cigarettes in their entire life
Washington State PRAMS 1996-1998

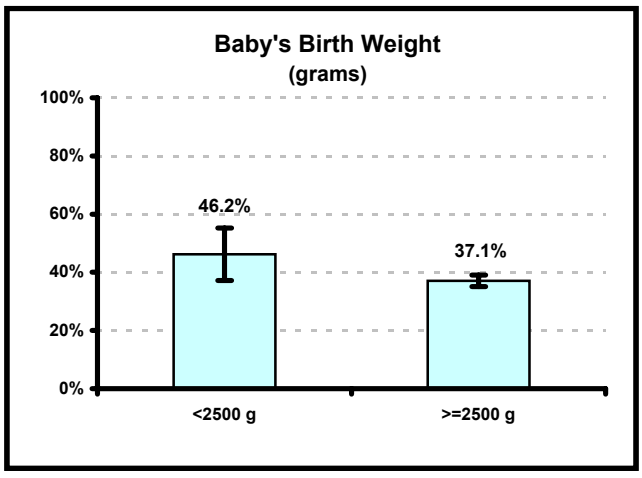












Smoking Cigarettes in the Three Months before Pregnancy (Table 2.3 & Figure 2.3a)

Summary of Results:

- Twenty-five percent of women reported smoking cigarettes in the three months before pregnancy. These women were more likely to be:
  - Teenagers
  - Native American
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance)
- Women who had less than a high school education (37.5%) were almost three times more likely to report they had smoked cigarettes in the three months before pregnancy compared to those who were educated beyond high school (13.2%).
- The infant's birth weight status did not significantly differ among women who reported smoking cigarettes in the three months before pregnancy.

Table 2.3: Women who reported smoking cigarettes in the three months before pregnancy[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,906)	Yes (n= 1,415)	% Yes[c] (%= 25.0)	95% CI (23.2-26.8)
Maternal Age				
<20 years	988	353	44.2	(38.7-49.7)
20-24 years	1,517	431	31.2	(27.3-35.1)
25-34 years	2,832	533	19.0	(16.6-21.4)
35+ years	568	97	16.3	(11.6-21.0)
Race/Ethnicity				
White	1,393	371	27.7	(25.3-30.1)
African American	943	206	22.9	(20.4-25.4)
Native American	1,202	550	47.5	(45.0-50.0)
Asian/Pacific Islander	1,192	157	13.6	(11.6-15.6)
Hispanic	1,176	131	11.3	(9.5-13.1)
Maternal Education[d]				
<12 years	1,274	383	37.5	(32.6-42.4)
12 years	1,676	524	34.3	(30.6-38.0)
>12 years	2,311	353	13.2	(11.0-15.4)
Marital Status				
Married	3,795	585	16.6	(14.8-18.4)
Unmarried	2,100	826	47.4	(43.7-51.1)
Medicaid Status				
Medicaid[e]	3,102	980	36.4	(33.5-39.3)
Cash Assistance[f]	1,094	507	53.1	(47.6-58.6)
Pre-First Steps (FS) Medicaid Only[g]	1,226	319	32.1	(27.6-36.6)
First Steps Expansion[h]	782	154	22.7	(17.4-28.0)
Non-Medicaid[i]	2,788	429	17.3	(15.1-19.5)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	345	105	38.4	(29.2-47.6)
Normal Birth Weight (≥2500 g)	5,546	1,307	24.3	(22.5-26.1)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =128. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

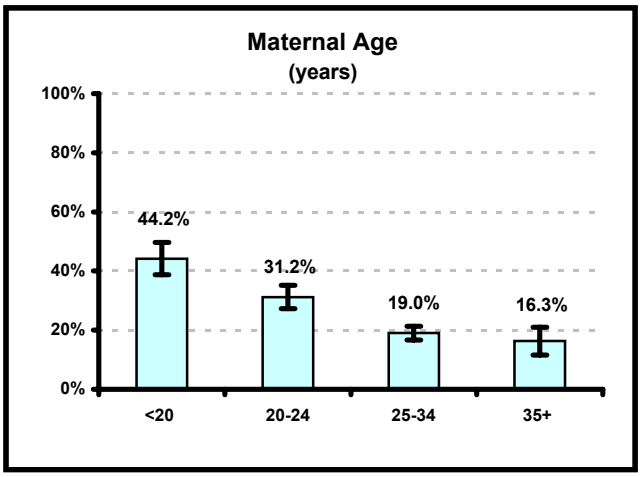
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

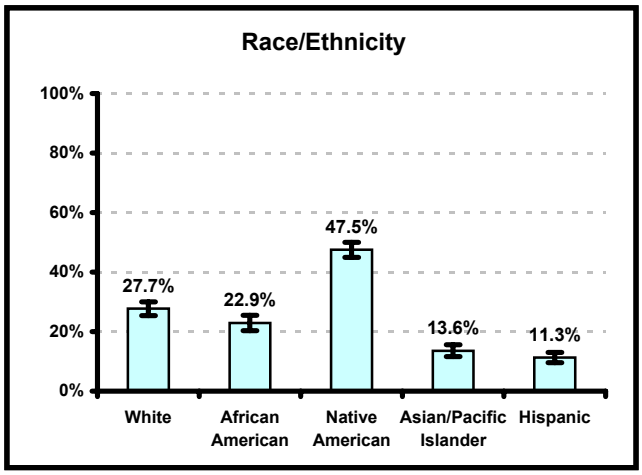
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

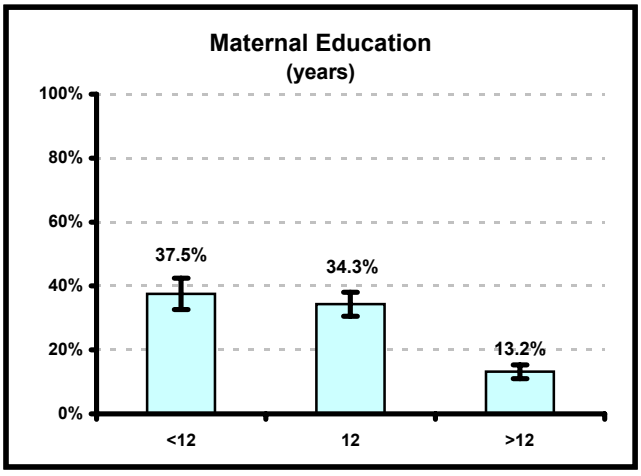
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

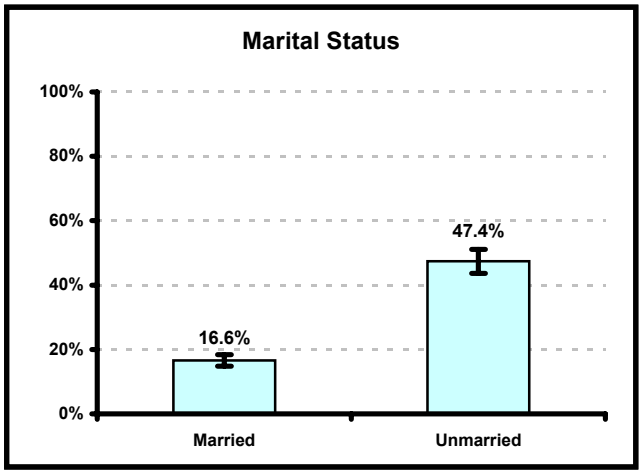
[i]Non-Medicaid - women not enrolled in Medicaid.

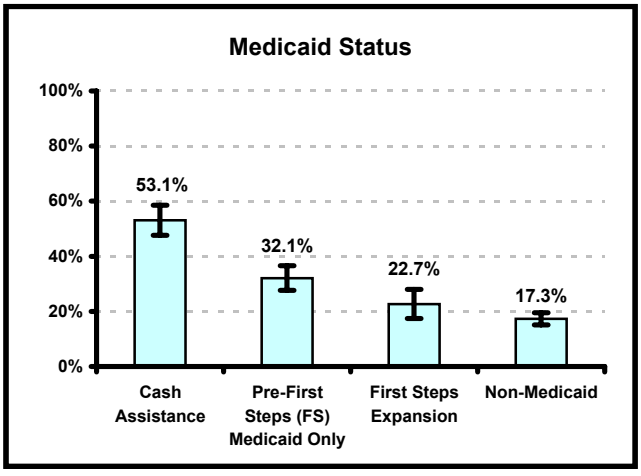
Figure 2.3a: Women who reported smoking cigarettes in the three months before pregnancy
Washington State PRAMS 1996-1998











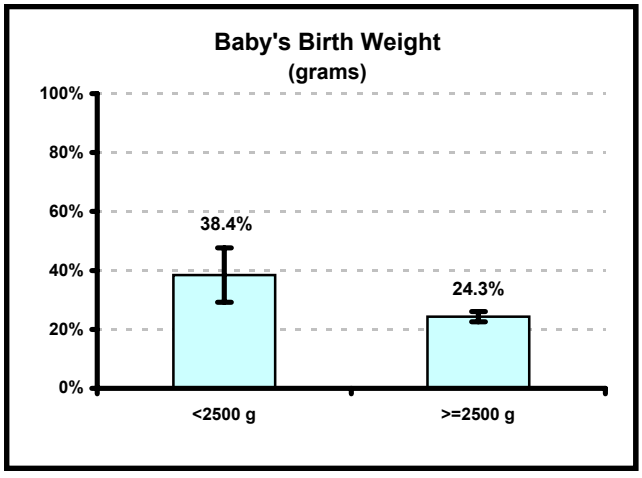
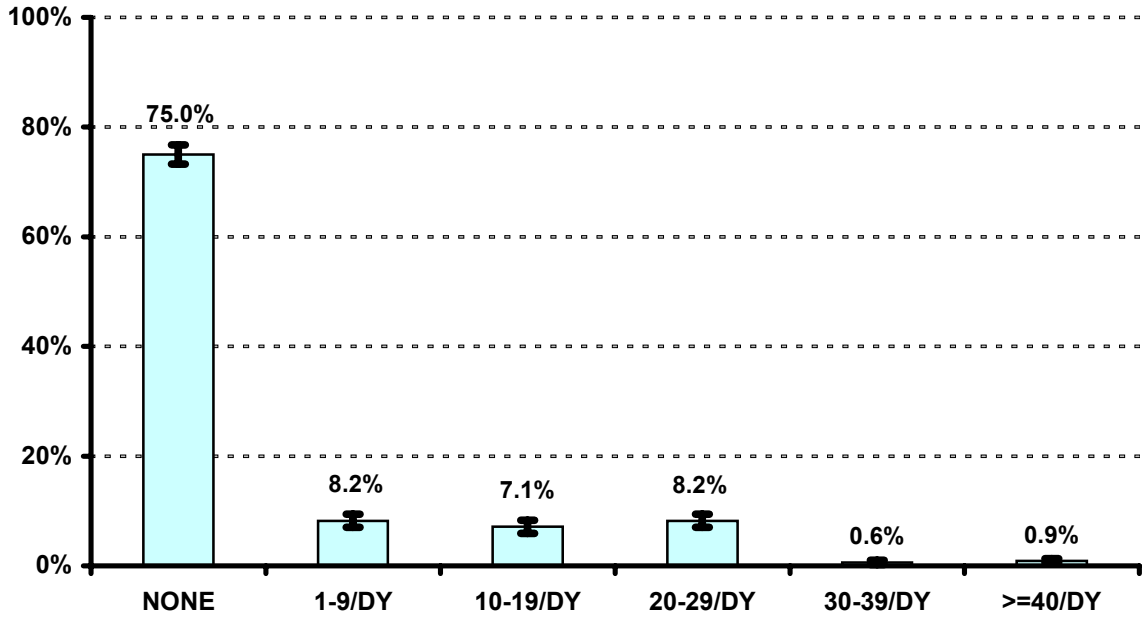


Figure 2.3b: Grouped number of cigarettes smoked per day in the three months before pregnancy, Washington State PRAMS 1996-1998



Summary of Results:

- Based on the 1996-1998 Washington State PRAMS data regarding the three months before pregnancy, 8.2 percent of women reported smoking one to nine cigarettes per day, 7.1 percent reported smoking ten to nineteen cigarettes per day, 8.2 percent reported smoking twenty to twenty-nine cigarettes per day, 0.6 percent reported smoking thirty to thirty-nine cigarettes per day, and 0.9 percent reported smoking more than forty cigarettes per day.
- Seventy-five percent of women reported they had not smoked cigarettes during the three months before pregnancy.

Smoking Cigarettes in the Last Three Months of Pregnancy (Table 2.4 & Figure 2.4a)

Summary of Results:

- An estimated 12.3 percent of women reported smoking cigarettes in the last three months of pregnancy. These women were more likely to be:
  - Native American
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance)
  - Women with infants weighing less than 2500 grams at birth
- The 1996-1998 Washington State PRAMS data show that teenagers (20.7%) were 2.5 times more likely to report smoking cigarettes in the last three months of pregnancy compared to women aged 35 years or older (8.2%).
- Women who had less than a high school education (22.0%) were almost five times more likely to report they had smoked cigarettes in the three months before pregnancy compared to those who were educated beyond high school (4.5%).

Table 2.4: Women who reported smoking cigarettes in the last three months of pregnancy[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,955)	Yes (n= 702)	% Yes[b] (%= 12.3)	95% CI (10.9-13.7)
Maternal Age				
<20 years	1,010	155	20.7	(16.0-25.4)
20-24 years	1,534	212	16.6	(13.3-19.9)
25-34 years	2,838	273	9.1	(7.5-10.7)
35+ years	572	62	8.2	(4.9-11.5)
Race/Ethnicity				
White	1,397	184	13.8	(12.0-15.6)
African American	951	123	13.9	(11.7-16.1)
Native American	1,225	275	23.9	(21.7-26.1)
Asian/Pacific Islander	1,195	74	6.6	(5.2-8.0)
Hispanic	1,187	46	4.0	(2.8-5.2)
Maternal Education[d]				
<12 years	1,300	218	22.0	(17.5-26.5)
12 years	1,689	263	17.9	(15.0-20.8)
>12 years	2,317	137	4.5	(3.3-5.7)
Marital Status				
Married	3,803	261	7.3	(5.9-8.7)
Unmarried	2,141	438	25.7	(22.2-29.2)
Medicaid Status				
Medicaid[e]	3,148	538	20.6	(17.9-23.3)
Cash Assistance[f]	1,111	307	35.8	(30.3-41.3)
Pre-First Steps (FS) Medicaid Only[g]	1,247	154	13.5	(10.0-17.0)
First Steps Expansion[h]	790	77	13.0	(8.7-17.3)
Non-Medicaid[i]	2,791	161	6.8	(5.4-8.2)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	347	77	22.4	(14.6-30.2)
Normal Birth Weight (≥2500 g)	5,593	623	11.8	(10.4-13.2)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =79. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

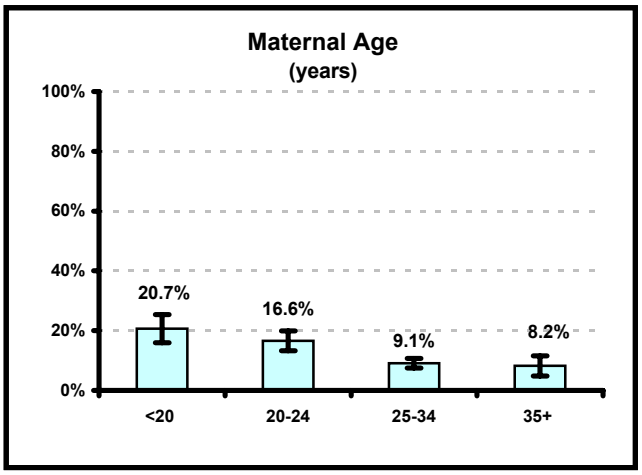
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

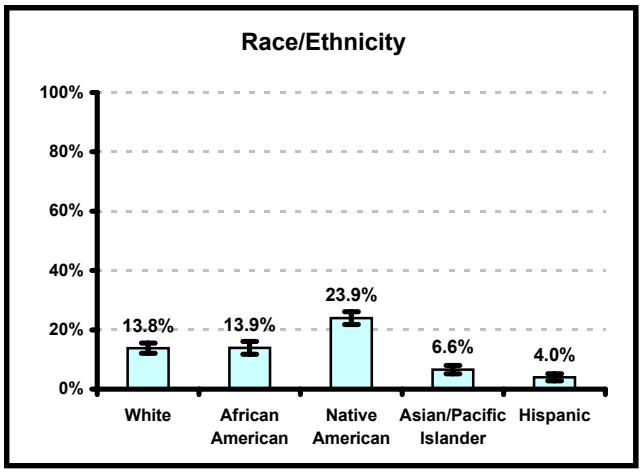
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

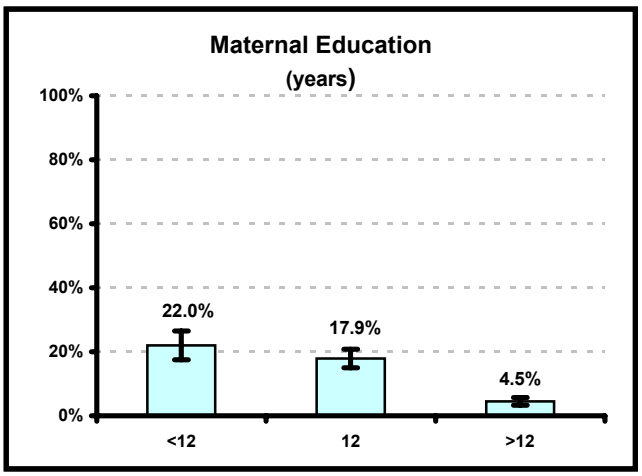
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

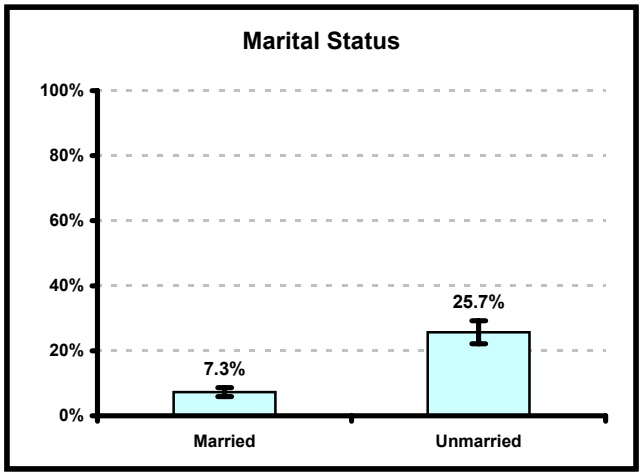
[i]Non-Medicaid - women not enrolled in Medicaid.

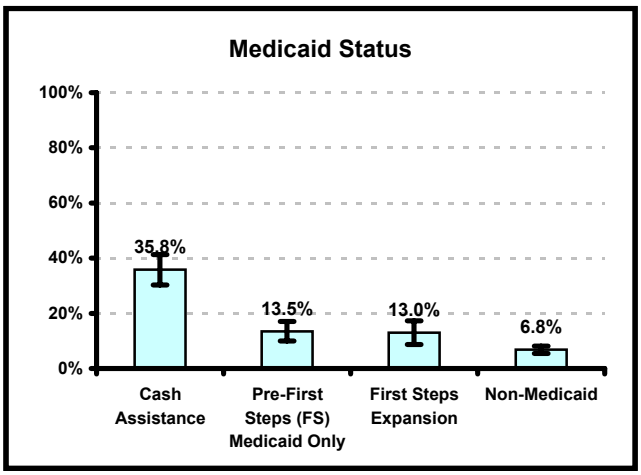
Figure 2.4a: Women who reported smoking cigarettes in the last three months of pregnancy
Washington State PRAMS 1996-1998











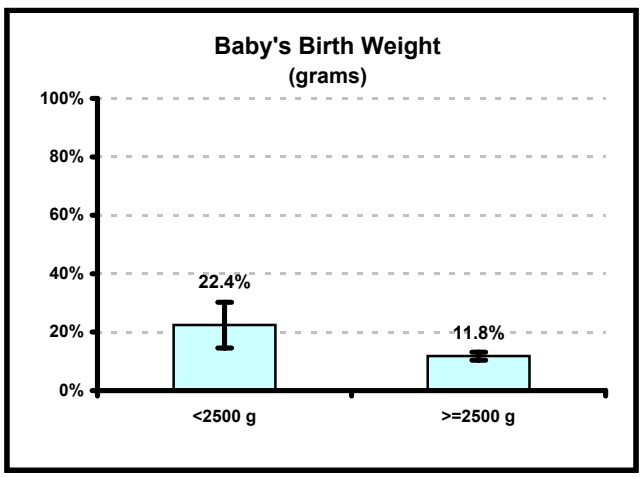
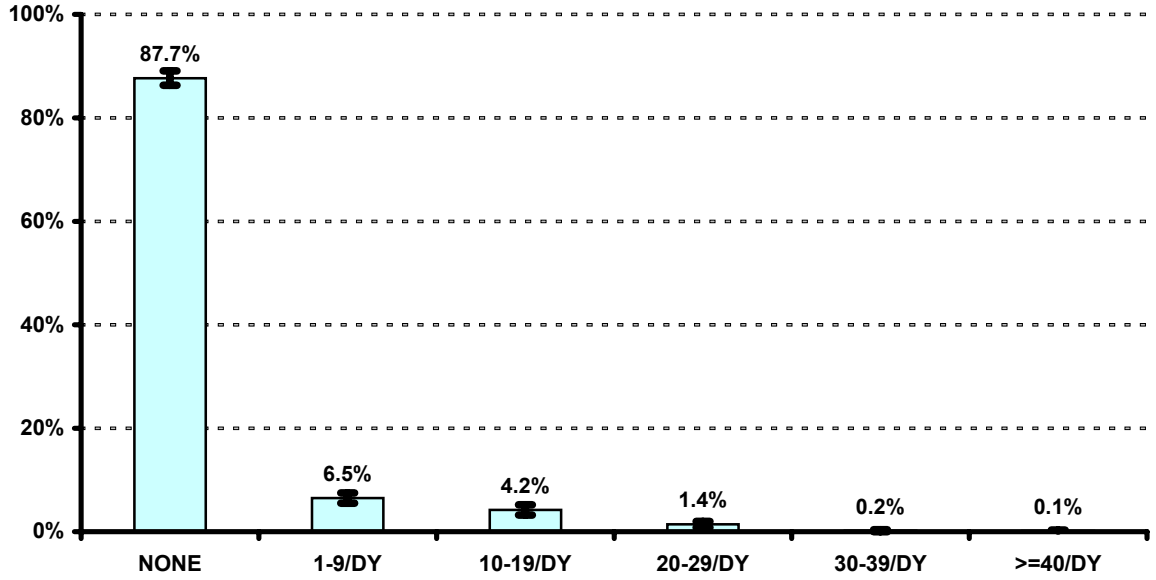


Figure 2.4b: Grouped number of cigarettes smoked per day in the last three months of pregnancy, Washington State PRAMS 1996-1998



Summary of Results:

- Based on the 1996-1998 Washington State PRAMS data regarding the last three months of pregnancy, 6.5 percent of women reported smoking one to nine cigarettes per day, 4.2 percent reported smoking ten to nineteen cigarettes per day, 1.4 percent reported smoking twenty to twenty-nine cigarettes per day, 0.2 percent reported smoking between thirty to thirty-nine cigarettes per day, and 0.1 percent reported smoking more than forty cigarettes per day.
- Nearly ninety percent (87.7%) of women said they had not smoked cigarettes during the last three months of pregnancy.

Smoking Cigarettes at Postpartum (Table 2.5 & Figure 2.5a)

Summary of Results:

- Nearly 18 percent (17.8%) of women reported smoking cigarettes in the postpartum period. These women were more likely to be:
  - Teenagers
  - Native American
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance)
  - Women with infants weighing less than 2500 grams at birth
- Women who had less than a high school education (32.0%) were almost four times more likely to report they had smoked cigarettes in the postpartum period compared to those who were educated beyond high school (7.4%).

Table 2.5: Women who reported smoking cigarettes at postpartum[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,961)	Yes (n= 1,065)	% Yes[c] (%= 17.8)	95% CI (16.2-19.4)
Maternal Age				
<20 years	1,008	277	36.0	(30.5-41.5)
20-24 years	1,540	342	23.4	(19.7-27.1)
25-34 years	2,841	375	11.9	(9.9-13.9)
35+ years	571	71	11.3	(7.4-15.2)
Race/Ethnicity				
White	1,398	260	19.6	(17.4-21.8)
African American	954	181	20.0	(17.5-22.5)
Native American	1,229	431	36.9	(34.5-39.3)
Asian/Pacific Islander	1,194	104	9.2	(7.6-10.8)
Hispanic	1,186	89	7.8	(6.2-9.4)
Maternal Education[d]				
<12 years	1,299	314	32.0	(27.1-36.9)
12 years	1,700	412	25.2	(21.9-28.5)
>12 years	2,315	215	7.4	(5.8-9.0)
Marital Status				
Married	3,801	405	11.0	(9.4-12.6)
Unmarried	2,149	656	35.6	(31.9-39.3)
Medicaid Status				
Medicaid[e]	3,152	788	28.5	(25.6-31.4)
Cash Assistance[f]	1,115	427	44.4	(38.7-50.1)
Pre-First Steps (FS) Medicaid Only[g]	1,246	250	24.4	(20.1-28.7)
First Steps Expansion[h]	791	111	15.3	(10.8-19.8)
Non-Medicaid[i]	2,793	271	10.5	(8.7-12.3)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	350	97	28.8	(20.4-37.2)
Normal Birth Weight (≥2500 g)	5,596	966	17.2	(15.6-18.8)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database.

Missing responses =73. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

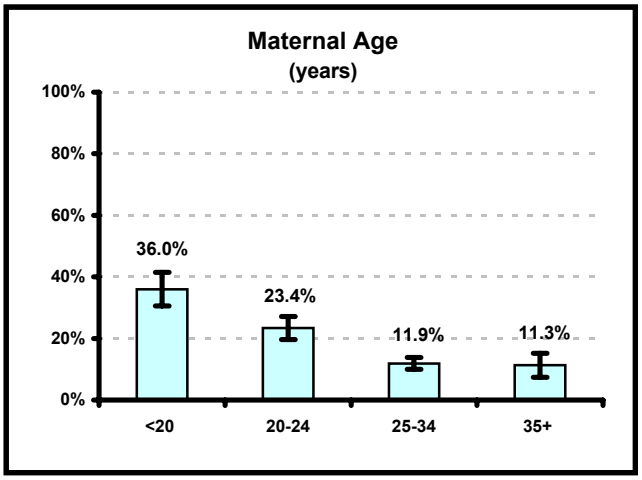
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

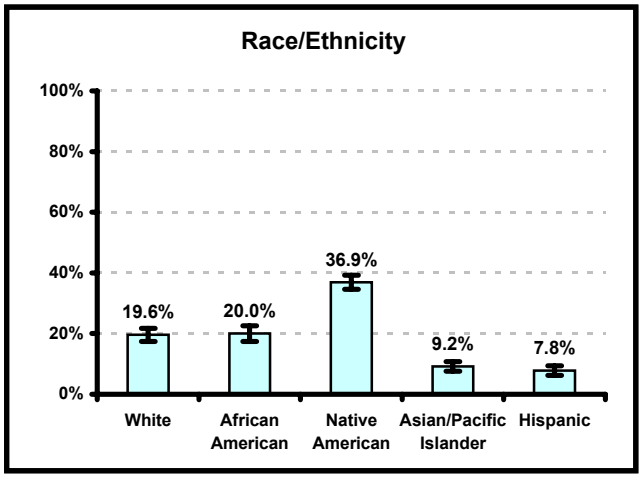
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

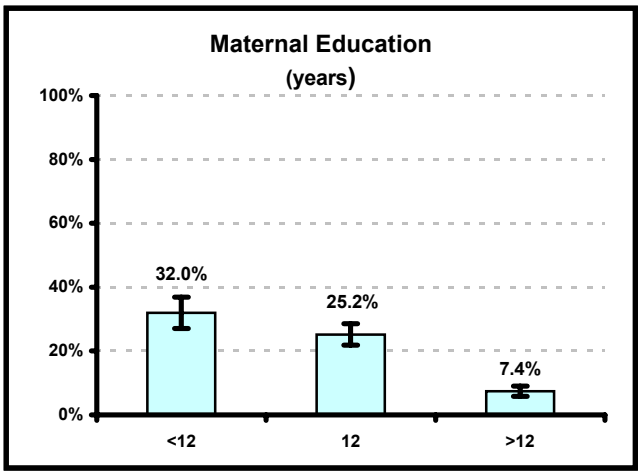
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

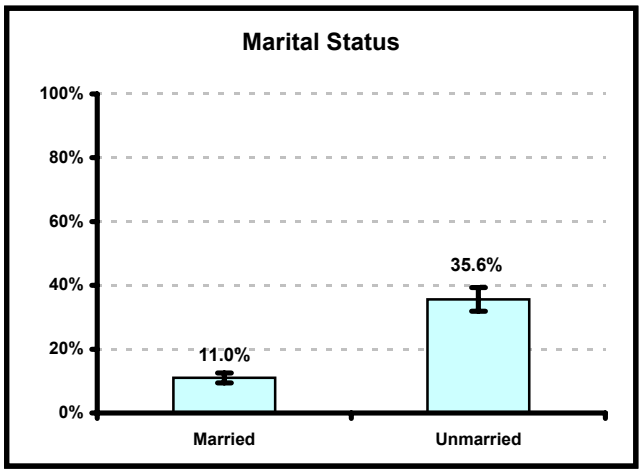
[i]Non-Medicaid - women not enrolled in Medicaid.

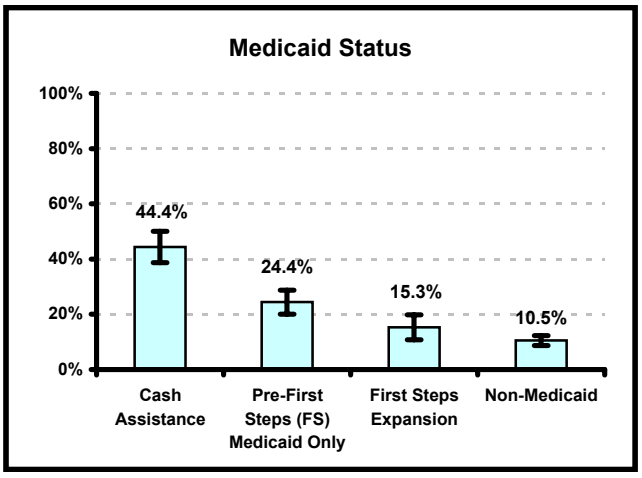
Figure 2.5a: Women who reported smoking cigarettes at postpartum
Washington State PRAMS 1996-1998











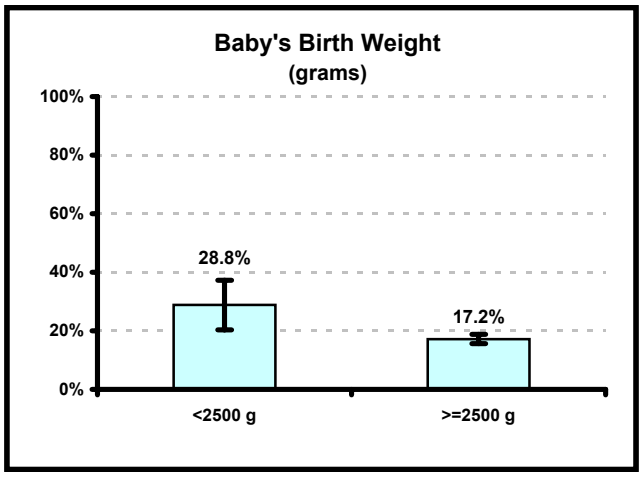
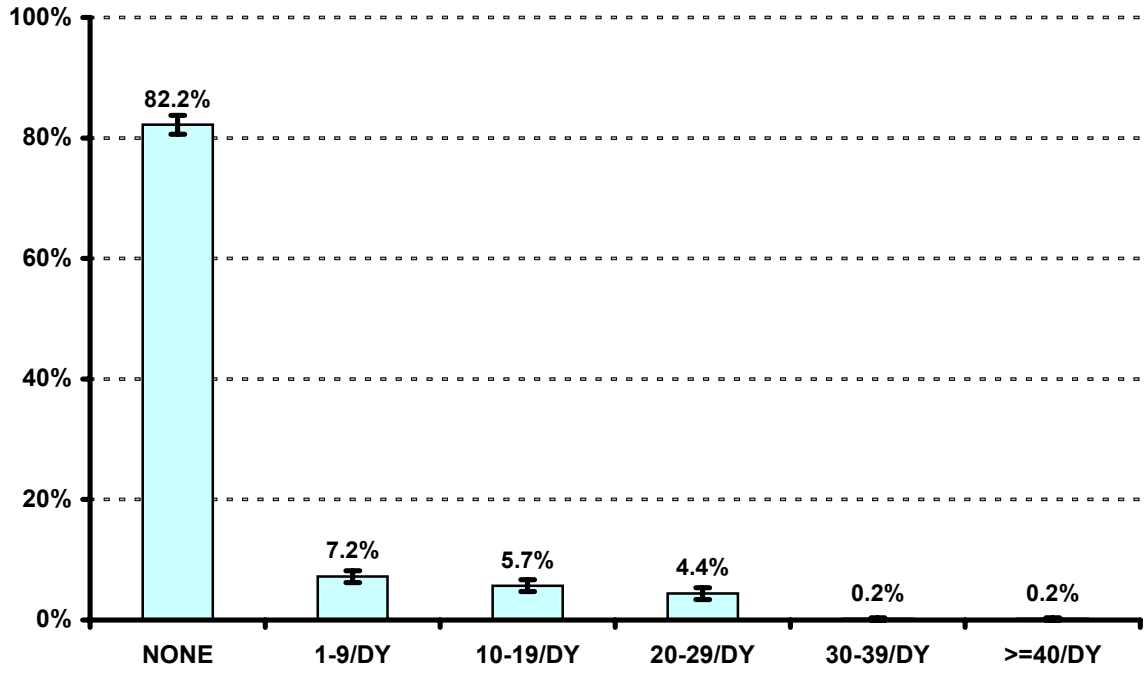


Figure 2.5b: Grouped number of cigarettes smoked per day at postpartum, Washington State PRAMS 1996-1998



Summary of Results:

- Based on the 1996-1998 Washington State PRAMS data regarding the postpartum period, 7.2 percent of women reported smoking one to nine cigarettes per day, 5.7 percent reported smoking ten to nineteen cigarettes per day, 4.4 percent reported smoking twenty to twenty-nine cigarettes per day, 0.2 percent reported smoking between thirty to thirty-nine cigarettes per day, and 0.2 percent reported smoking more than forty cigarettes per day.
- Approximately 82.2 percent of women reported they had not smoked cigarettes in the postpartum period.

Survey Question #44:

About how many hours a day, on average, is your new baby in the same room with someone who is smoking?

____ Hours (6.0%)

My baby is never in the same room with someone who is smoking (94.0%)

Summary of Results:

Infant Exposure to Cigarette Smoke (Table 2.6 & Figure 2.6)

- Six percent of women said their new baby was in the same room with someone who was smoking anytime during the day. These women were more likely to be:
  - Teenagers
  - Native American
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance)

- The infant's birth weight status was not significantly associated with women's report that their new baby was in the same room with someone who was smoking anytime during the day.

Table 2.6: Women who reported their new baby was in the same room with someone who was smoking anytime during the day

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,815)	Yes (n= 343)	% Yes[b] (%= 6.0)	95% CI (5.0-7.0)
Maternal Age				
<20 years	969	100	14.9	(10.6-19.2)
20-24 years	1,497	99	6.7	(4.5-8.9)
25-34 years	2,791	118	3.6	(2.6-4.6)
35+ years	558	26	5.0	(2.3-7.7)
Race/Ethnicity				
White	1,377	85	6.5	(5.1-7.9)
African American	929	63	6.9	(5.3-8.5)
Native American	1,197	119	10.3	(8.7-11.9)
Asian/Pacific Islander	1,161	38	3.2	(2.2-4.2)
Hispanic	1,151	38	3.3	(2.3-4.3)
Maternal Education[c]				
<12 years	1,256	97	11.8	(8.1-15.5)
12 years	1,661	128	8.9	(6.7-11.1)
>12 years	2,274	85	2.4	(1.6-3.2)
Marital Status				
Married	3,730	155	4.0	(3.0-5.0)
Unmarried	2,074	187	11.4	(8.7-14.1)
Medicaid Status				
Medicaid[d]	3,068	247	10.4	(8.2-12.6)
Cash Assistance[e]	1,080	107	13.8	(9.7-17.9)
Pre-First Steps (FS) Medicaid Only[f]	1,214	94	9.1	(6.2-12.0)
First Steps Expansion[g]	774	46	8.4	(4.9-11.9)
Non-Medicaid[h]	2,746	96	3.0	(2.0-4.0)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	316	19	7.5	(2.0-13.0)
Normal Birth Weight (≥2500 g)	5,486	322	5.9	(4.9-6.9)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =219. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data are missing from birth certificate data.

[d]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

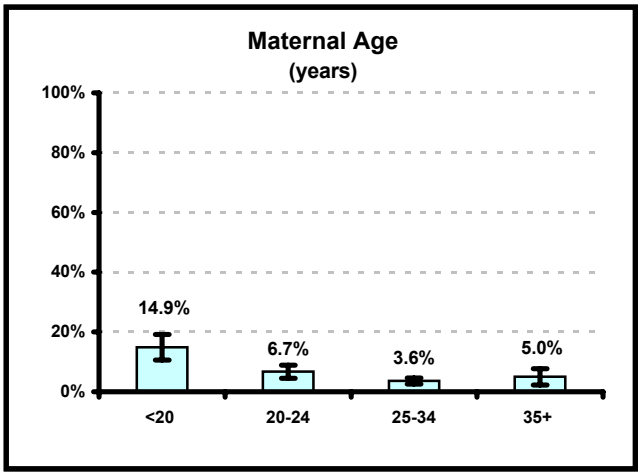
[e]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

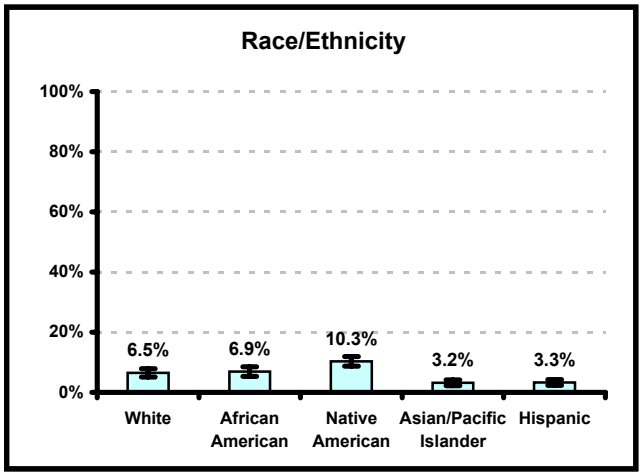
[f]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

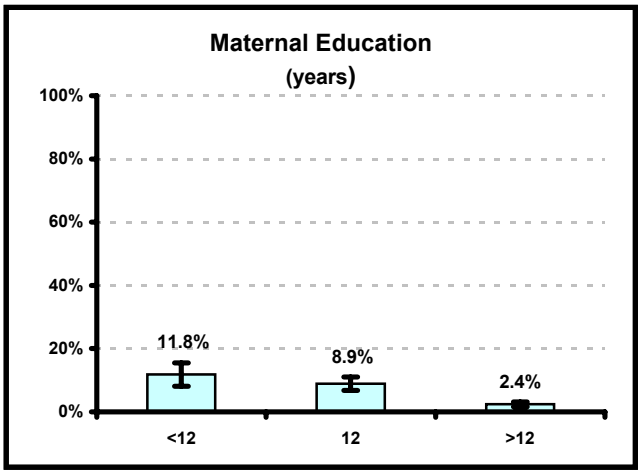
[g]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

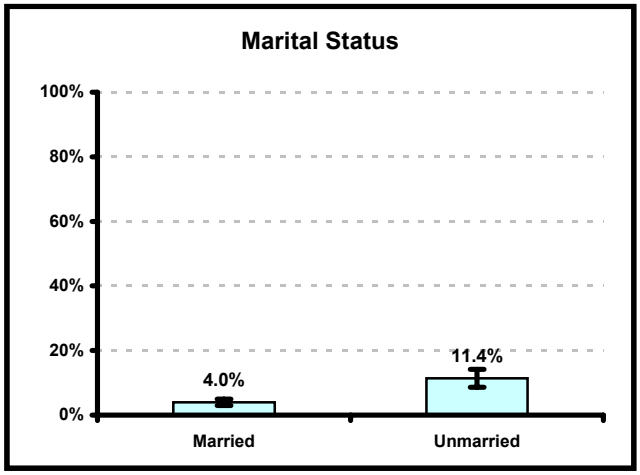
[h]Non-Medicaid - women not enrolled in Medicaid.

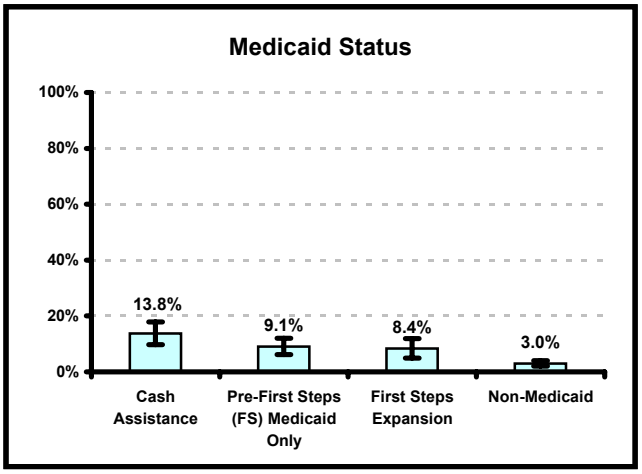
Figure 2.6: Women who reported their new baby was in the same room with someone who was smoking anytime during the day
Washington State PRAMS 1996-1998

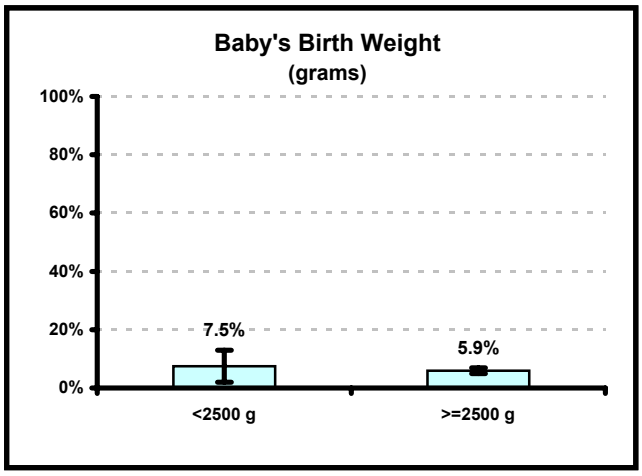












ALCOHOL USE

WASHINGTON STATE PRAMS 1996-1998

Alcohol Use

Prenatal exposure to alcohol is associated with a wide range of adverse reproductive outcomes including morphologic, neurologic, behavioral, cognitive, hormonal, and immunologic abnormalities and fetal death.[1,2,3,4] The most severe adverse effects associated with excessive alcohol consumption during pregnancy is fetal alcohol syndrome (FAS),[1,2,3,4] which may include facial anomalies, reduced head circumference, and mental retardation.[5] A recent review estimated the incidence of FAS to be 1.95 cases per 1,000 live births in the United States (US) and 46.5 cases per 1,000 live births among US heavy drinkers.[6] The effect of alcohol exposure on the fetus is complex and on a continuum.

The Institute of Medicine, in an effort to define these effects more clearly, replaced the term fetal alcohol effect (FAE) with Alcohol-Related Birth Defects (ARBD) and Alcohol-Related Neurodevelopmental Disorder (ARND). Children with ARBD and ARND can exhibit complex patterns of behavioral or cognitive abnormalities, levels of central nervous system neurodevelopmental abnormalities, one of more congenital defects, growth retardation, low normal IQ, etc.[7] The economic cost associated with FAS-related anomalies (e.g. including growth deficiency, surgical repair of structural defects, treatment of perceptual and cognitive problems, and mental retardation) in the US is at least $321 million per year.

A "safe" level of alcohol intake for pregnant women has not been identified. However, research indicates that mothers of infants affected with FAS consume high levels of alcohol or binge drink during pregnancy.[1,2,3,4] Women who consume alcohol later in gestation have an increased risk of giving birth to premature babies and babies small-for-gestational age. By avoiding alcohol use during pregnancy, alcohol-related defects such as FAS and FAE are entirely preventable.

The effects of alcohol consumption on the fetus may occur before a woman is aware she is pregnant.[8] According to one study, only about 20 percent of women knew they were pregnant before their third week of pregnancy and almost 20 percent still did not know they were pregnant by their eighth week of pregnancy. Because women are likely to report first trimester substance use as their use after they knew they were pregnant, alcohol use just before pregnancy may measure early pregnancy use more accurately than measuring alcohol use in the first trimester.[9]

Washington State PRAMS data can be used to monitor alcohol use during early and late pregnancy and to target programs among women most at risk for heavy alcohol use during pregnancy.

References:

[1] Abel EL, ed. Fetal alcohol syndrome: From mechanism to prevention. New York: CRC Press, 1996.

[2] Ebrahim SH, et al.: Alcohol consumption by pregnant women in the United States during 1988-1995. Alcohol Use in Pregnancy 1998;92(2):187-192.

[3] Jacobson JL and Jacobson SW. Prenatal alcohol exposure and neurobehavioral development: Where is the threshold? Alcohol Health Res. World 1994;18:30-6.

[4] Moore CA et al. Does light-to-moderate alcohol consumption during pregnancy increase the risk of renal anomalies among offspring? Pediatrics 1997;99:1-5.

[5] Coles CD. Impact of prenatal alcohol exposure on the newborn and the child. Clin Obstet Gynecol 1993;36:255-66.

[6] Abel EL. An update on incidence of FAS: FAS is not an equal opportunity birth defect. Neurotoxicol Teratol 1995;17:437-43.

[7] Warren KR and Foudin LL. Alcohol-related birth defects- the past, present, and future. Alcohol Research & Health 2001;25:153-158.

[8] Floyd RL, Decaufle P, Hungerford DW. Alcohol use prior to pregnancy recognition. Am J Prev Med 1999; 17:101-7.

[9] Day NL, Cottreau CM, Richardson GA. The epidemiology of alcohol, marijuana, and cocaine use among women of childbearing age and pregnant women. Clin Obstet Gynecol 1993; 36:232-45.

Survey Question #16:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below? **For each thing, circle Y (Yes) if someone talked with you about it or N (No) if no one talked with you about it.**

d. How drinking alcohol during pregnancy could affect your baby.

No (18.2%)

Yes (81.8%)

Summary of Results:

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Drinking during Pregnancy (Table 3.1 & Figure 3.1)

- Nearly 82 percent (81.8%) of women said a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby. These women were more likely to be:
  - Teenagers
  - Hispanic
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients (specifically Cash Assistance and Pre-First Steps Expansion Medicaid Only)
  - Women with infants weighing less than 2500 grams at birth.

- There was no association between women who reported a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby and their infant's birth weight status.

Table 3.1: Women who reported a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,871)	Yes (n= 4,948)	% Yes[b] (%= 81.8)	95% CI (80.2-83.4)
Maternal Age				
<20 years	992	924	91.8	(88.9-94.7)
20-24 years	1,524	1,325	83.6	(80.5-86.7)
25-34 years	2,797	2,264	79.3	(76.9-81.7)
35+ years	557	434	77.0	(71.7-82.3)
Race/Ethnicity				
White	1,394	1,111	80.0	(77.8-82.2)
African American	946	811	85.9	(83.7-88.1)
Native American	1,213	1,043	86.5	(84.7-88.3)
Asian/Pacific Islander	1,152	921	80.6	(78.4-82.8)
Hispanic	1,166	1,062	91.2	(89.6-92.8)
Maternal Education[c]				
<12 years	1,278	1,172	90.8	(87.9-93.7)
12 years	1,668	1,429	80.7	(77.6-83.8)
>12 years	2,297	1,816	78.7	(76.2-81.2)
Marital Status				
Married	3,758	3,047	78.9	(76.9-80.9)
Unmarried	2,104	1,894	89.3	(86.9-91.7)
Medicaid Status				
Medicaid[d]	3,097	2,740	85.4	(83.0-87.8)
Cash Assistance[e]	1,098	973	87.3	(83.6-91.0)
Pre-First Steps (FS) Medicaid Only[f]	1,225	1,099	87.3	(84.0-90.6)
First Steps Expansion[g]	774	668	80.0	(74.9-85.1)
Non-Medicaid[h]	2,759	2,198	79.4	(77.2-81.6)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	334	292	89.4	(84.1-94.7)
Normal Birth Weight (≥2500 g)	5,523	4,643	81.3	(79.7-82.9)
Site of Prenatal Care Visit				
Hospital Clinic	1,579	1,384	87.2	(84.5-89.9)
Health Department Clinic	516	466	88.0	(83.1-92.9)
Private Doctor's Office	2,707	2,155	78.4	(76.0-80.8)
Military Facility	239	212	87.6	(80.5-94.7)
Community or Migrant Health Center	252	222	87.2	(80.1-94.3)
Other Clinic	519	460	84.4	(78.9-89.9)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; and prenatal care sites from PRAMS. Missing responses =163. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data are missing from birth certificate data.

[d]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

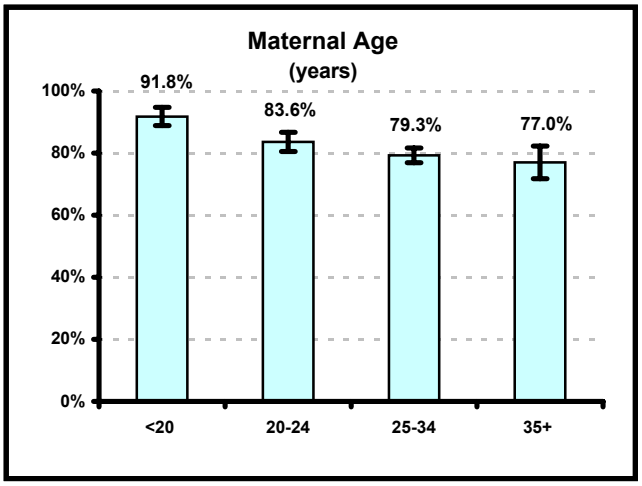
[e]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

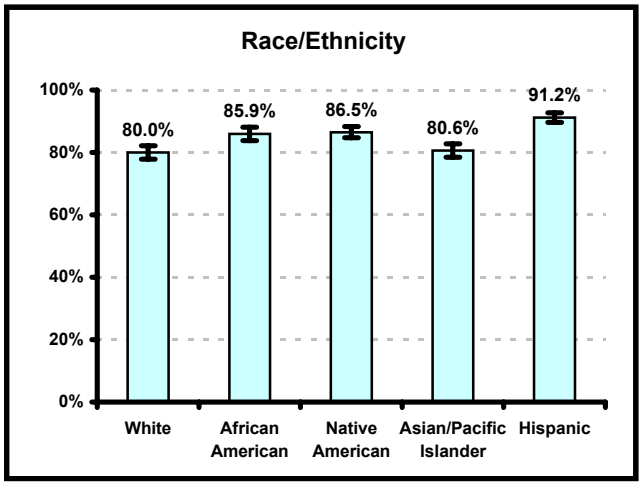
[f]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

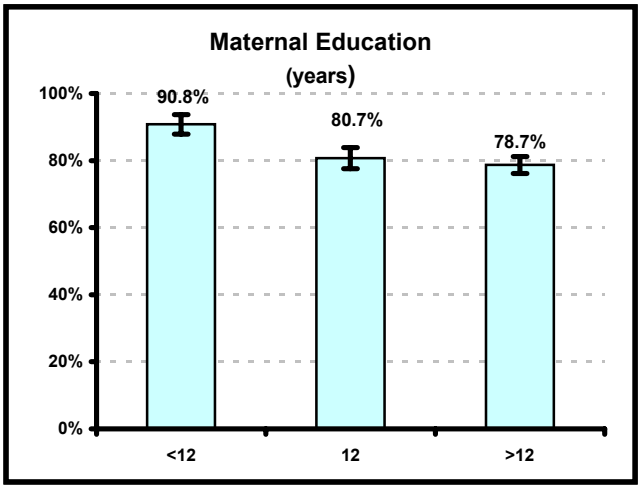
[g]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

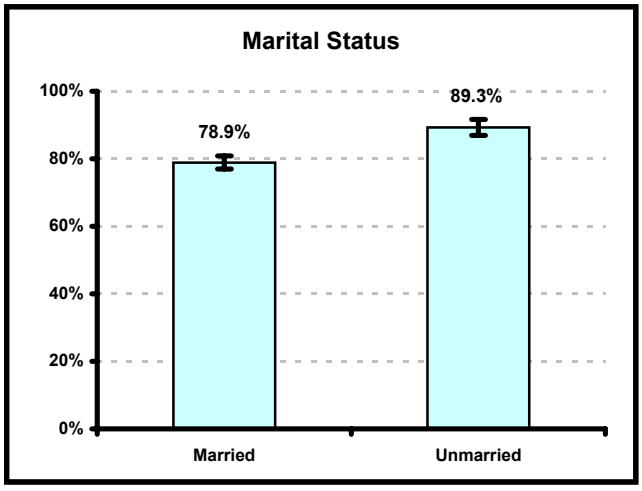
[h]Non-Medicaid - women not enrolled in Medicaid.

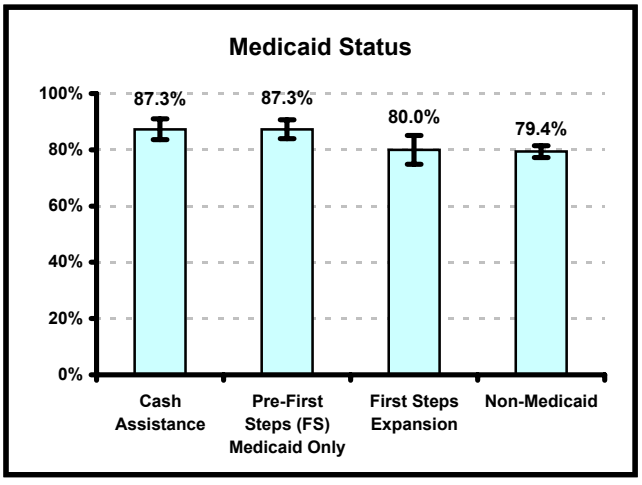
Figure 3.1: Women who reported a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby
Washington State PRAMS 1996-1998











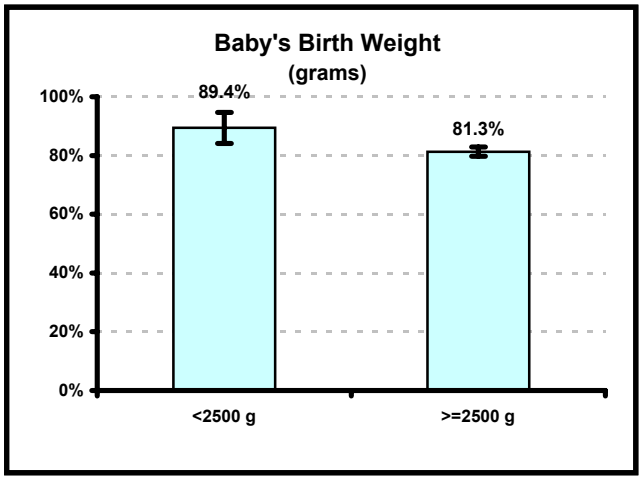
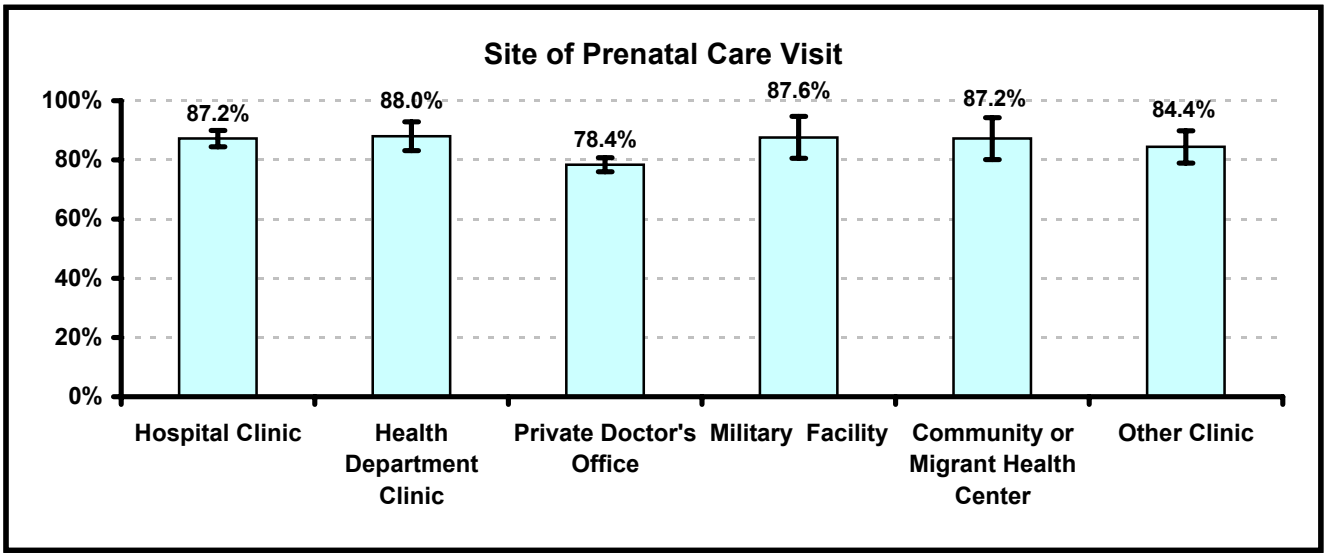


Figure 3.1 (cont'd): Women who reported a prenatal health care provider discussed how drinking alcohol during pregnancy could affect their baby
Washington State PRAMS 1996-1998



Survey Question #25a:

During the ***3 months before*** you got pregnant, how many alcoholic drinks did you have in an average week? (A drink is: One glass of wine. One wine cooler. One can or bottle of beer. One shot of liquor. One mixed drink.)

I didn't drink then (53.7%)

Less than 1 drink a week (24.6%)

1 to 3 drinks a week (13.3%)

4 to 6 drinks a week (5.7%)

7 to 13 drinks a week (2.1%)

14 or more drinks a week (0.6%)

I don't know (0.0%)

Summary of Results:

Drinking Alcohol during the Three Months before Pregnancy (Table 3.2 & Figure 3.2a)

- Nearly half (46.3%) of women said they consumed alcohol during the three months before pregnancy. These women were more likely to be:
  - White
  - Non-Medicaid recipients
- Women 35 years or older (53.0%) were more likely to report drinking alcohol during the three months before pregnancy compared to teenagers (34.4%).
- Alcohol consumption during the three months before pregnancy was more prevalent among women who were educated beyond high school (51.7%) compared to those with less than a high school education (26.0%).
- Drinking alcohol during the three months before pregnancy was not associated with marital status or the infant's birth weight status.

Table 3.2: Women who reported drinking alcohol during the three months before pregnancy[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,889)	Yes (n= 2,199)	% Yes[c] (%= 46.3)	95% CI (44.3-48.3)
Maternal Age				
<20 years	980	296	34.4	(29.1-39.7)
20-24 years	1,510	608	45.9	(41.8-50.0)
25-34 years	2,824	1,073	48.2	(45.5-50.9)
35+ years	574	222	53.0	(46.9-59.1)
Race/Ethnicity				
White	1,394	742	53.0	(50.5-55.5)
African American	952	383	39.9	(37.0-42.8)
Native American	1,204	564	46.1	(43.6-48.6)
Asian/Pacific Islander	1,195	278	22.4	(20.0-24.8)
Hispanic	1,144	232	20.1	(17.7-22.5)
Maternal Education[d]				
<12 years	1,250	306	26.0	(21.5-30.5)
12 years	1,682	709	50.6	(46.9-54.3)
>12 years	2,314	996	51.7	(48.6-54.8)
Marital Status				
Married	3,776	1,343	45.2	(42.8-47.6)
Unmarried	2,103	853	49.4	(45.7-53.1)
Medicaid Status				
Medicaid[e]	3,084	995	38.1	(35.2-41.0)
Cash Assistance[f]	1,098	440	43.7	(38.0-49.4)
Pre-First Steps (FS) Medicaid Only[g]	1,215	331	33.7	(29.2-38.2)
First Steps Expansion[h]	771	224	38.0	(32.3-43.7)
Non-Medicaid[i]	2,790	1,197	51.7	(49.0-54.4)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	350	124	40.7	(31.7-49.7)
Normal Birth Weight (>2500 g)	5,526	2,071	46.6	(44.4-48.8)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =145. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

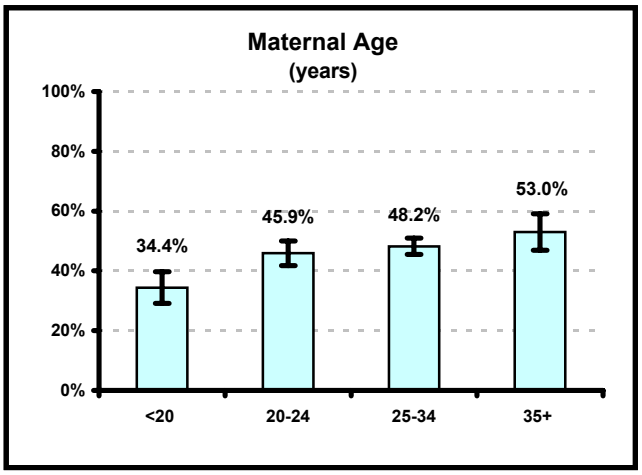
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

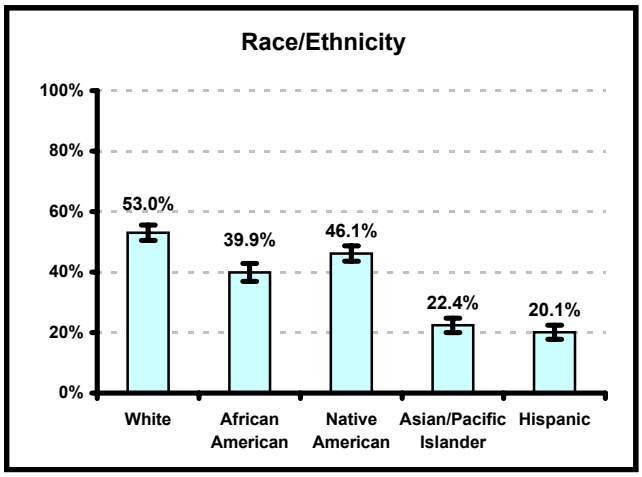
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

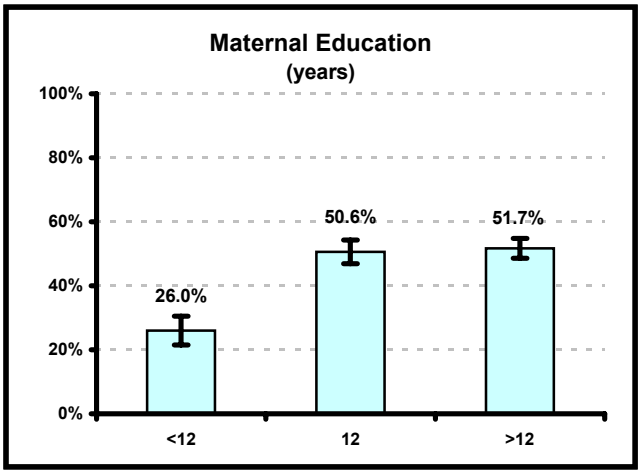
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

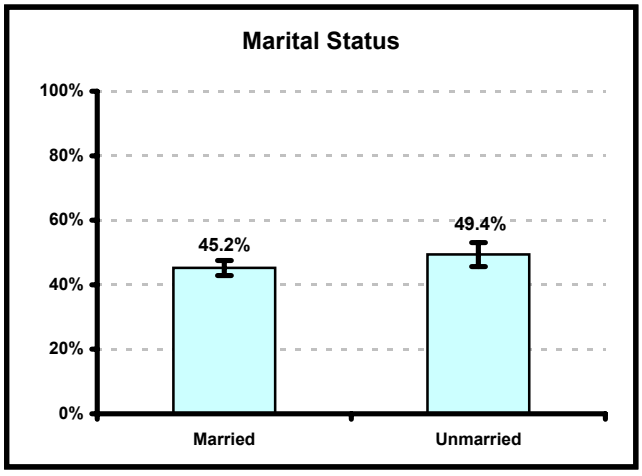
[i]Non-Medicaid - women not enrolled in Medicaid.

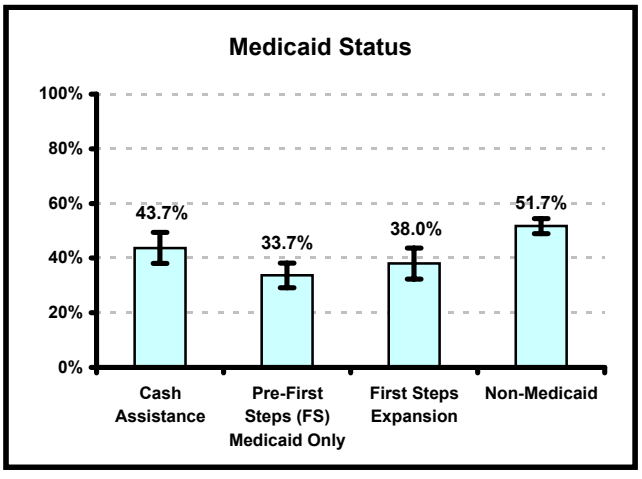
Figure 3.2a: Women who reported drinking alcohol during the three months before pregnancy
Washington State PRAMS 1996-1998











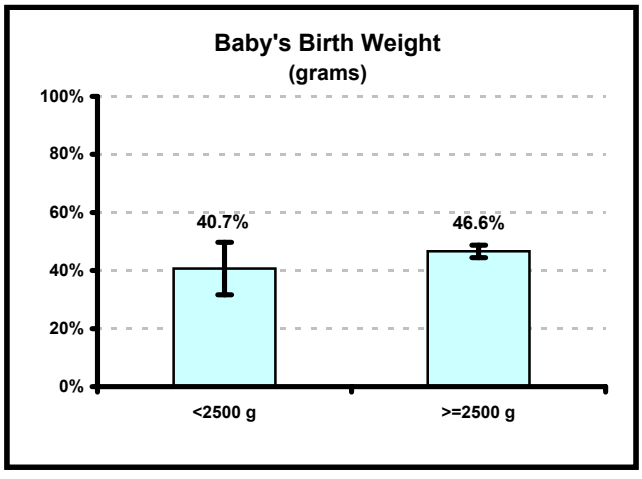
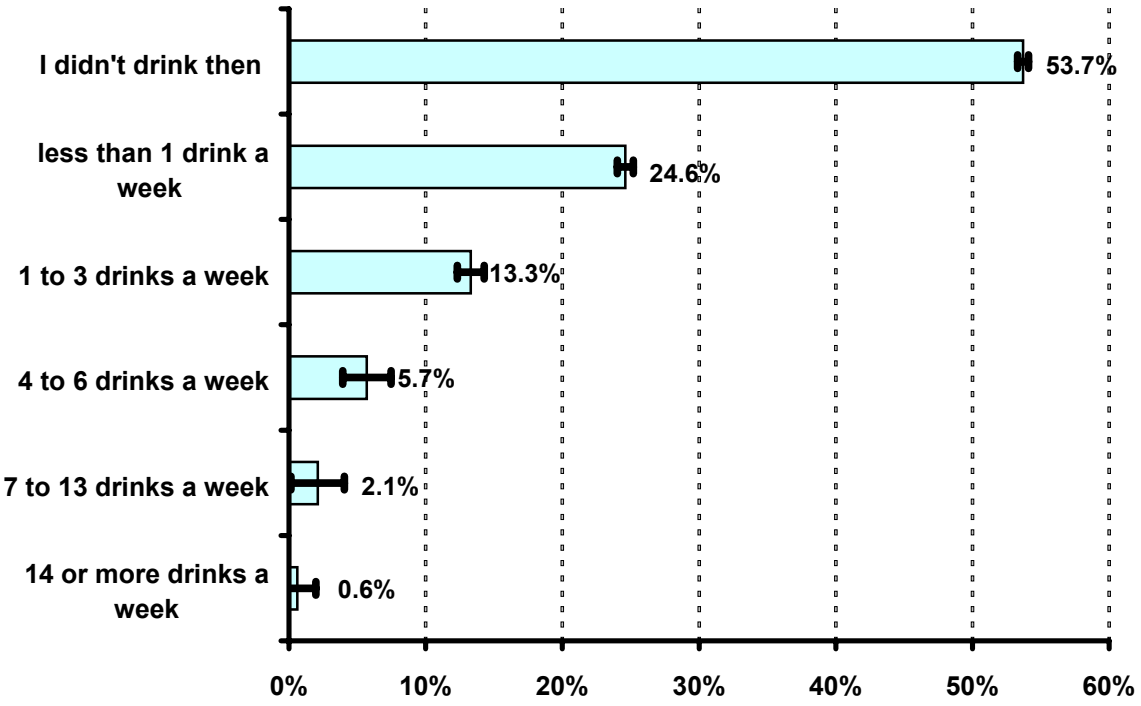


Figure 3.2b: Number of alcoholic drinks in an average week during the three months before pregnancy, Washington State PRAMS 1996-1998



Summary of Results:

- Based on the 1996-1998 Washington State PRAMS data regarding the three months before pregnancy, 24.6 percent of women said they had less than one alcoholic drink a week, 13.3 percent had 1 to 3 drinks a week, 5.7 percent had 4 to 6 drinks a week, 2.1 percent had 7 to 13 drinks a week, and 0.6 percent had 14 or more alcoholic drinks a week.
- Over half of the women (53.7%) reported they did not consume alcohol during the three months before pregnancy.

Survey Question #25b:

During the 3 months before you got pregnant, how many times did you drink 5 or more alcoholic drinks at one sitting?

____ Times (18.1%)

I didn't drink then (81.9%)

I don't know (0.0%)

Summary of Results:

Drinking Five or More Alcoholic Drinks at One Sitting during the Three Months before Pregnancy (Table 3.3 & Figure 3.3)

- Approximately 18.1 percent of women reported drinking five or more alcoholic drinks at one sitting during the three months before pregnancy. These women were more likely to be:
  - Native American
  - Women with 12 years of education
  - Unmarried

- Women aged 20 to 24 years of age (23.2%) reported drinking five or more alcoholic drinks at one sitting during the three months before pregnancy compared to those who were 25 to 34 years of age (23.2%).
- Drinking five or more alcoholic drinks at one sitting during the three months before pregnancy was not significantly associated with Medicaid status or the infant's birth weight.

Table 3.3: Women who reported drinking five or more alcholic drinks at one sitting during the three months before pregnancy[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 4,826)	Yes (n= 768)	% Yes[c] (%= 18.1)	95% CI (16.3-19.9)
Maternal Age				
<20 years	852	138	17.9	(13.0-22.8)
20-24 years	1,264	279	23.2	(19.1-27.3)
25-34 years	2,259	300	16.3	(13.8-18.8)
35+ years	450	51	14.9	(9.4-20.4)
Race/Ethnicity				
White	992	205	21.0	(18.5-23.5)
African American	754	107	14.0	(11.6-16.4)
Native American	978	290	30.0	(27.5-32.5)
Asian/Pacific Islander	1,063	64	5.9	(4.5-7.3)
Hispanic	1,039	102	9.8	(8.0-11.6)
Maternal Education[d]				
<12 years	1,133	158	15.3	(11.2-19.4)
12 years	1,357	285	25.4	(21.5-29.3)
>12 years	1,782	262	15.1	(12.6-17.6)
Marital Status				
Married	3,074	361	14.1	(12.1-16.1)
Unmarried	1,743	405	28.3	(24.4-32.2)
Medicaid Status				
Medicaid[e]	2,671	463	19.1	(16.4-21.8)
Cash Assistance[f]	918	216	25.1	(19.6-30.6)
Pre-First Steps (FS) Medicaid Only[g]	1,071	138	15.4	(11.3-19.5)
First Steps Expansion[h]	682	109	17.7	(12.6-22.8)
Non-Medicaid[i]	2,143	302	17.2	(14.7-19.7)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	283	41	13.9	(6.3-21.5)
Normal Birth Weight (>2500 g)	4,531	727	18.3	(16.3-20.3)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =1208. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

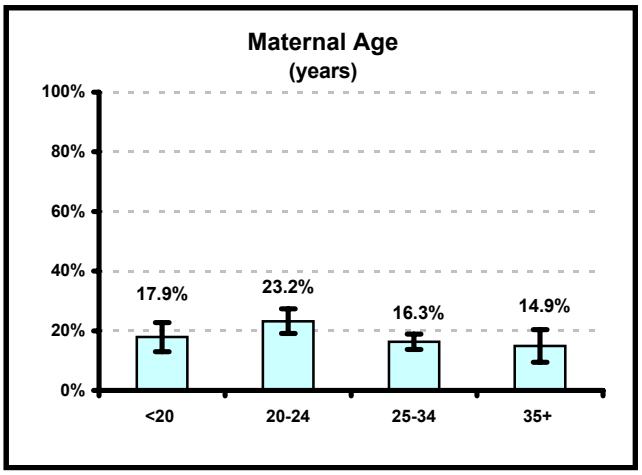
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

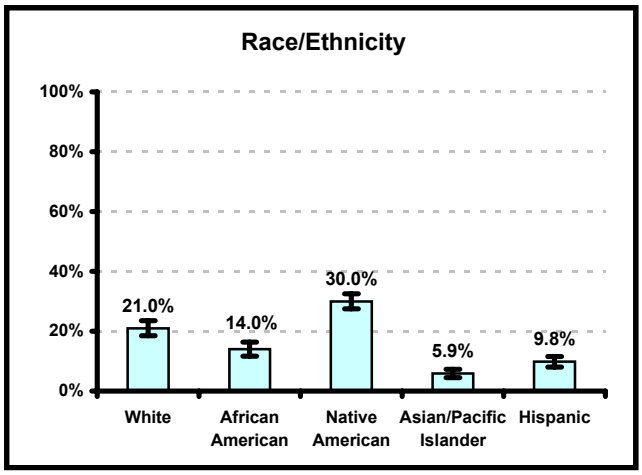
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

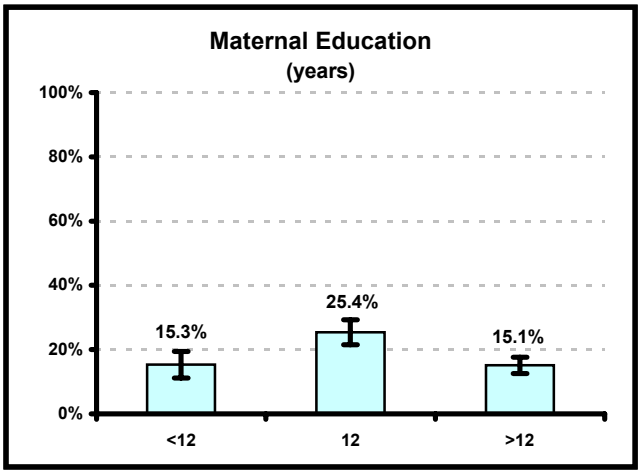
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

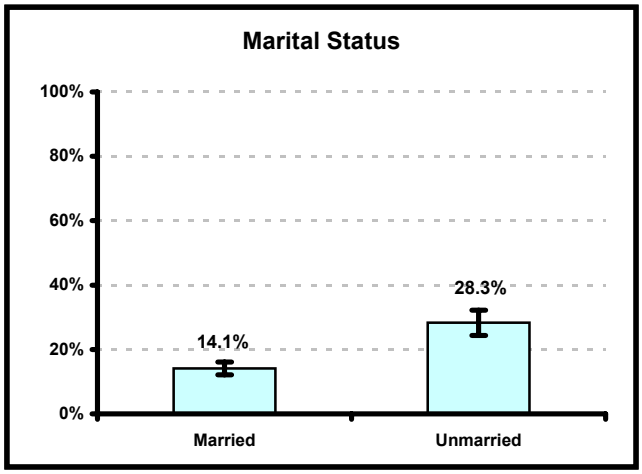
[i]Non-Medicaid - women not enrolled in Medicaid.

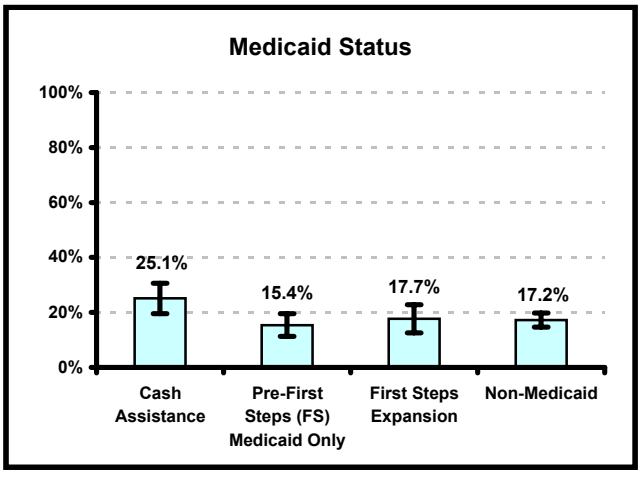
Figure 3.3: Women who reported drinking five or more alcholic drinks at one sitting during the three months before pregnancy
Washington State PRAMS 1996-1998

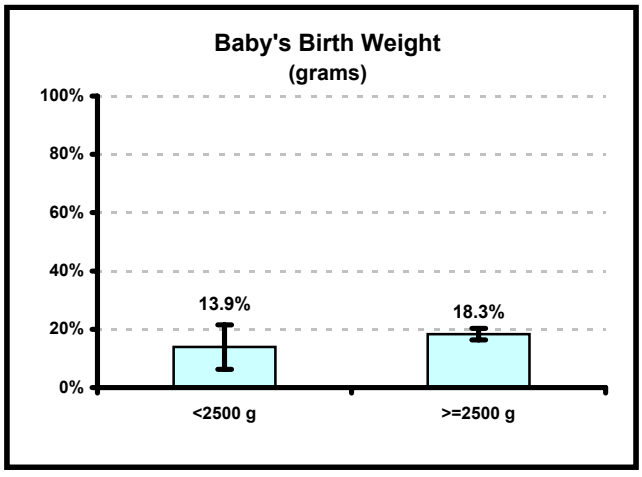












Survey Question #26a:

During the ***last 3 months*** of your pregnancy, how many alcoholic drinks did you have in an average week? (A drink is: One glass of wine. One wine cooler. One can or bottle of beer. One shot of liquor. One mixed drink.)

I didn't drink then (94.1%)

Less than 1 drink a week (5.0%)

1 to 3 drinks a week (0.7%)

4 to 6 drinks a week (0.1%)

7 to 13 drinks a week (0.0%)

14 or more drinks a week (0.0%)

I don't know (0.0%)

Summary of Results:

Drinking Alcohol during the Last Three Months of Pregnancy (Table 3.4 & Figure 3.4a)

- Around six percent (5.9%) of women said they consumed alcohol during the last three months of pregnancy. These women were more likely to be:
  - Women more than 12 years of education
  - Married
  - Non-Medicaid recipients
- Women 35 years or older (10.7%) were eight times more likely to report drinking alcohol during the last trimester of pregnancy compared to teenagers (1.3%).
- White women (6.7%) were significantly more likely to report consuming alcohol during the last three months of pregnancy compared to Asian/Pacific Islander women (3.0%) or Hispanic women (3.0%).
- Women's report of drinking alcohol during the last three months of pregnancy was not associated with the infant's birth weight status.

Table 3.4: Women who reported drinking alcohol during the last three months of pregnancy[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,939)	Yes (n= 266)	% Yes[c] (%= 5.9)	95% CI (4.9-6.9)
Maternal Age				
<20 years	1,005	20	1.3	(0.1-2.5)
20-24 years	1,528	59	3.4	(1.8-5.0)
25-34 years	2,832	148	7.1	(5.5-8.7)
35+ years	573	39	10.7	(6.6-14.8)
Race/Ethnicity				
White	1,402	94	6.7	(5.3-8.1)
African American	956	41	4.5	(3.1-5.9)
Native American	1,237	60	4.8	(3.8-5.8)
Asian/Pacific Islander	1,199	37	3.0	(2.0-4.0)
Hispanic	1,145	34	3.0	(2.0-4.0)
Maternal Education[d]				
<12 years	1,274	36	2.3	(0.9-3.7)
12 years	1,697	82	6.1	(4.1-8.1)
>12 years	2,319	118	6.6	(5.0-8.2)
Marital Status				
Married	3,789	178	6.7	(5.5-7.9)
Unmarried	2,140	87	3.5	(2.1-4.9)
Medicaid Status				
Medicaid[e]	3,130	116	3.3	(2.1-4.5)
Cash Assistance[f]	1,117	60	4.5	(2.1-6.9)
Pre-First Steps (FS) Medicaid Only[g]	1,238	36	2.9	(1.5-4.3)
First Steps Expansion[h]	775	20	2.7	(0.7-4.7)
Non-Medicaid[i]	2,793	149	7.6	(6.0-9.2)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	347	19	7.0	(1.7-12.3)
Normal Birth Weight (>2500 g)	5,578	245	5.8	(4.8-6.8)

[a]"I don't know" observations were excluded from PRAMS analyses

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; and Medicaid status from linkage with Washington State First Steps Database. Missing responses =95. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data are missing from birth certificate data.

[e]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

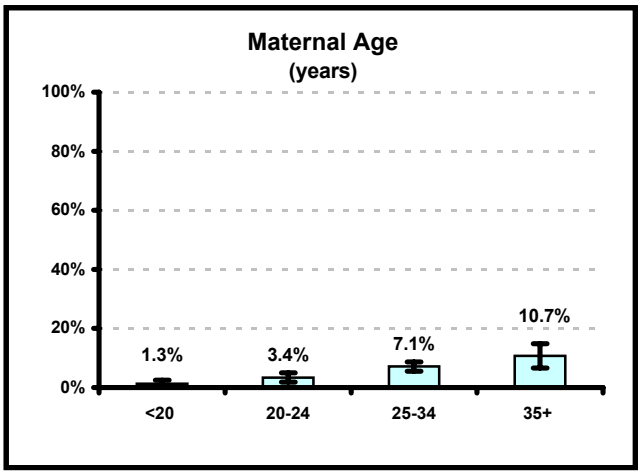
[f]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

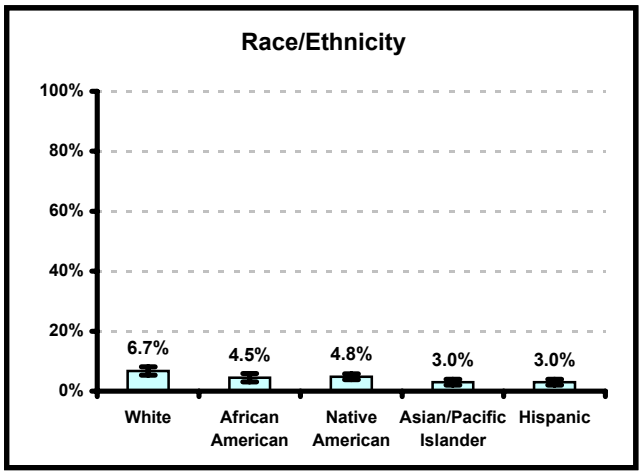
[g]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

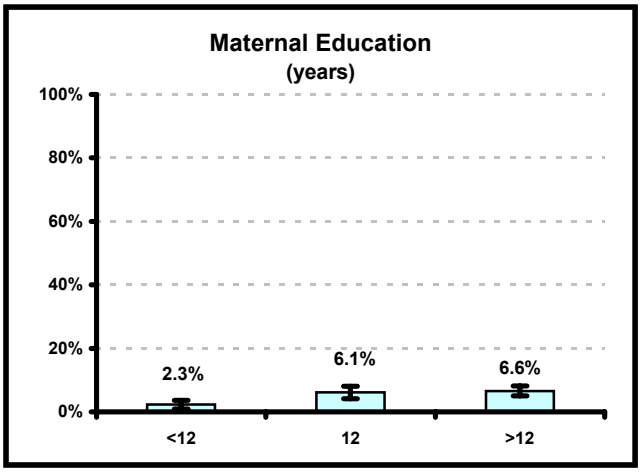
[h]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

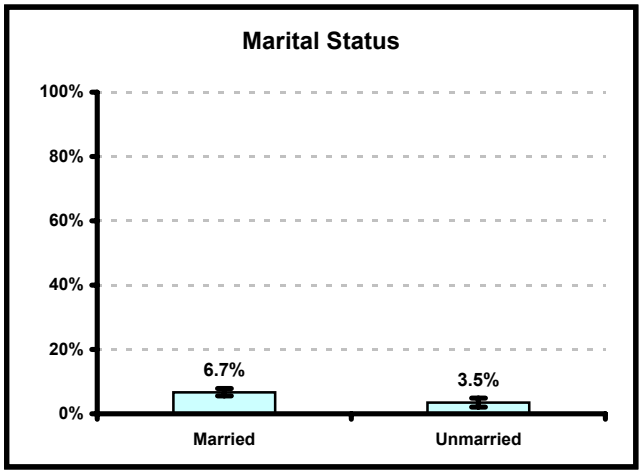
[i]Non-Medicaid - women not enrolled in Medicaid.

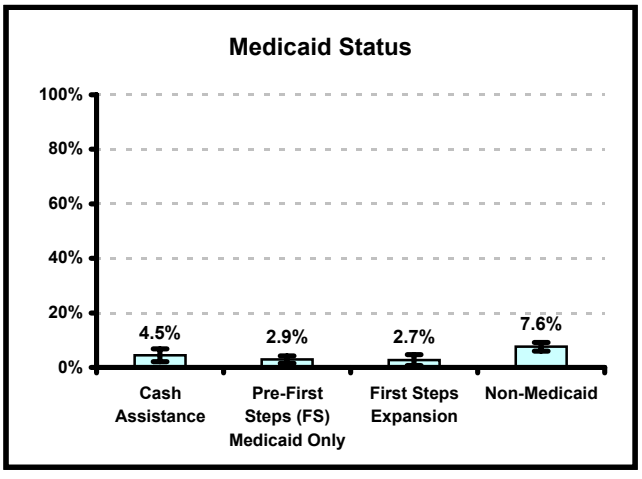
Figure 3.4a: Women who reported drinking alcohol during the last three months of pregnancy
Washington State PRAMS 1996-1998











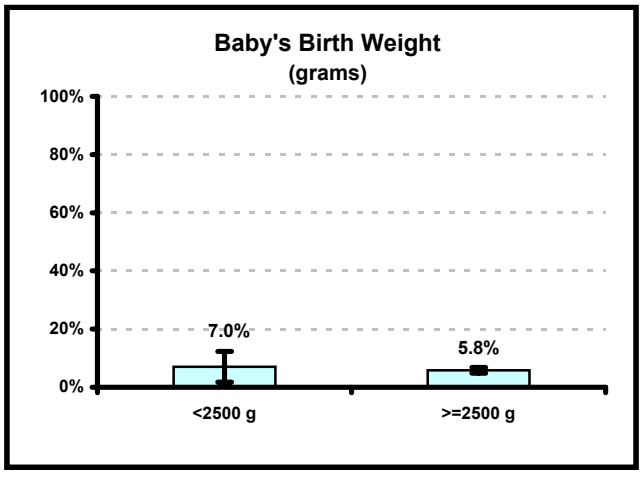
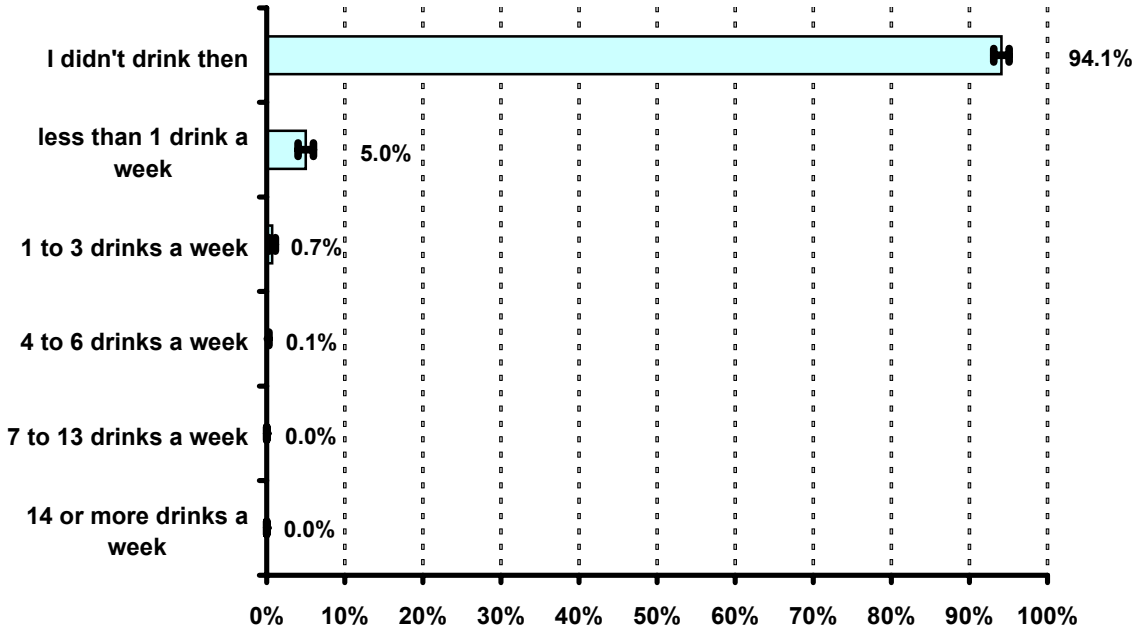


Figure 3.4b: Number of alcoholic drinks in an average week during the last three months of pregnancy, Washington State PRAMS 1996-1998



Summary of Results:

- Based on the 1996-1998 Washington State PRAMS data regarding the last three months of pregnancy, 5.7 percent of women said they had less than one alcoholic drink a week, 0.7 percent had 1 to 3 drinks a week, and 0.1 percent had 4 to 6 alcoholic drinks a week.
- Approximately 94.1 percent of women said they did not consume alcohol during the last three months of pregnancy.

ILLEGAL DRUG USE

WASHINGTON STATE PRAMS 1996-1998

Illegal Drug Use

Substance abuse during pregnancy has been identified as an issue critical to the health of mothers and babies from all ethnic, geographic and socioeconomic groups. Although accurate data is difficult to obtain on this topic, it is estimated that alcohol and/or drug abuse occurs in 5 to 10 percent of women in the childbearing years.[1]

The impact of illegal drug use on the health of the mother and her fetus or newborn is well documented, although it is difficult to separate the effects of the drugs on the fetus and newborn from the effects of accompanying risky behaviors. In addition, the effect of illegal drug use on the fetus depends on the drug type and amounts, timing of ingestion, and whether drug use is regular or episodic. Women who use illegal drugs during pregnancy are at increased risk for obstetrical and neonatal complications including poor maternal weight gain, sexually transmitted diseases, pre-term birth, low birth weight, fetal growth restriction, fetal alcohol syndrome, fetal death, and possible long-term neurobehavioral effects on the child. Substance abuse, by either the woman or her partner, is associated with domestic violence.[2]

Obstetric care providers play an important role influencing the health behaviors of the pregnant women in their care, and asking patients about substance use at the first prenatal visit is essential.[2] Universal screening, conducted by interview, self-report, and clinical observation, provides the practitioner with the opportunity to talk to every client about the risks of illegal substances, misuse of prescription drugs, and other risky behaviors. Screening and education of every client enhances public awareness of the risks of substance use during pregnancy and may prevent substance use in future pregnancies. The practice of universal screening increases identification of users and allows for the earliest possible intervention or referral to specialized treatment.[2]

The Healthy People 2010 goal is to eliminate the use of illicit drugs by pregnant women. Washington State PRAMS data can be used to increase provider discussion about the effects of illegal drug use during pregnancy with the intent of obtaining universal screening for this issue.

References:

[1] Morse B, Gehshan S, Hutchins E. Screening for substance abuse during pregnancy: Improving care, improving health. Arlington VA: National Center for Education in Maternal and Child Health 1997; 3.

[2] American College of Obstetricians and Gynecologists. Psychosocial risk factors: Perinatal screening and intervention. ACOG Educational Bulletin 255. Washington DC: ACOG, 1999; 214.

Survey Question #16h:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below? **For each thing, circle Y (Yes) if someone talked with you about it or N (No) if no one talked with you about it.**

h. How using illegal drugs could affect your baby.

No (28.7%)

Yes (71.3%)

Summary of Results:

Prenatal Health Care Provider Discussion of the Fetal Effects of Maternal Illegal Drug Use (Table 4.1 & Figure 4.1)

- An estimated 71.3 percent of women said a prenatal health care provider discussed how using illegal drugs could affect their baby. These women were more likely to be:
  - Teenagers
  - Hispanic
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients (specifically Pre-First Steps Medicaid Only)
- Based on the 1996-1998 Washington State PRAMS data, women who went to a health department clinic (82.2%) for their prenatal care services were significantly more likely to report a prenatal health care provider discussed how using illegal drugs could affect their baby compared to those who went to a private doctor's office (65.7%).
- There was no significant relationship between a women's report of prenatal health care provider discussion of how using illegal drugs could affect their baby and the infant's birth weight status.

Table 4.1: Women who reported a prenatal health care provider discussed how using illegal drugs could affect their baby

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,863)	Yes (n= 4,485)	% Yes[b] (%= 71.3)	95% CI (69.3-73.3)
Maternal Age				
<20 years	988	894	87.8	(84.1-91.5)
20-24 years	1,524	1,228	74.4	(70.7-78.1)
25-34 years	2,791	1,991	67.4	(64.7-70.1)
35+ years	559	371	62.5	(56.4-68.6)
Race/Ethnicity				
White	1,390	941	68.0	(65.6-70.4)
African American	946	770	81.8	(79.4-84.2)
Native American	1,216	963	80.2	(78.2-82.2)
Asian/Pacific Islander	1,147	796	70.5	(68.0-73.0)
Hispanic	1,164	1,015	87.5	(85.7-89.3)
Maternal Education[c]				
<12 years	1,275	1,119	84.2	(80.5-87.9)
12 years	1,666	1,326	72.5	(69.0-76.0)
>12 years	2,296	1,557	65.3	(62.4-68.2)
Marital Status				
Married	3,751	2,687	67.8	(65.4-70.2)
Unmarried	2,103	1,790	80.6	(77.5-83.7)
Medicaid Status				
Medicaid[d]	3,093	2,594	78.8	(76.3-81.3)
Cash Assistance[e]	1,097	905	78.9	(74.2-83.6)
Pre-First Steps (FS) Medicaid Only[f]	1,225	1,058	82.1	(78.2-86.0)
First Steps Expansion[g]	771	631	73.7	(68.2-79.2)
Non-Medicaid[h]	2,755	1,879	66.2	(63.7-68.7)
Baby's Birth Weight (grams)				
Low Birth Weight (<2500 g)	333	272	78.7	(70.9-86.5)
Normal Birth Weight (≥2500 g)	5,516	4,200	70.9	(68.9-72.9)
Site of Prenatal Care Visit				
Hospital Clinic	1,579	1,288	79.9	(76.4-83.4)
Health Department Clinic	515	439	82.2	(76.3-88.1)
Private Doctor's Office	2,701	1,871	65.7	(63.2-68.2)
Military Facility	239	203	83.7	(75.5-91.9)
Community or Migrant Health Center	252	206	78.3	(69.1-87.5)
Other Clinic	519	436	77.6	(71.3-83.9)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; and prenatal care sites from PRAMS. Missing responses =171. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data are missing from birth certificate data.

[d]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

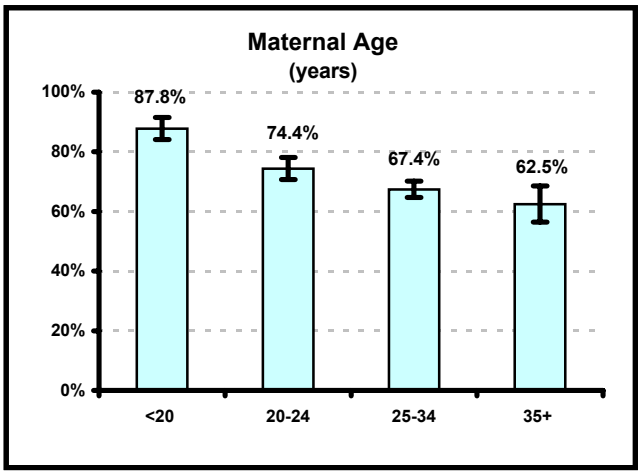
[e]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

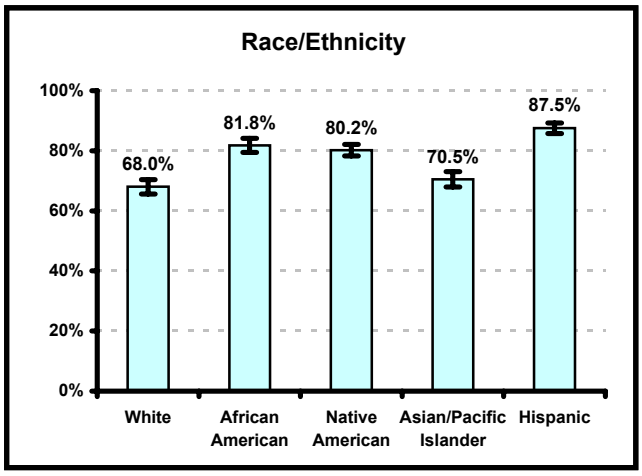
[f]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

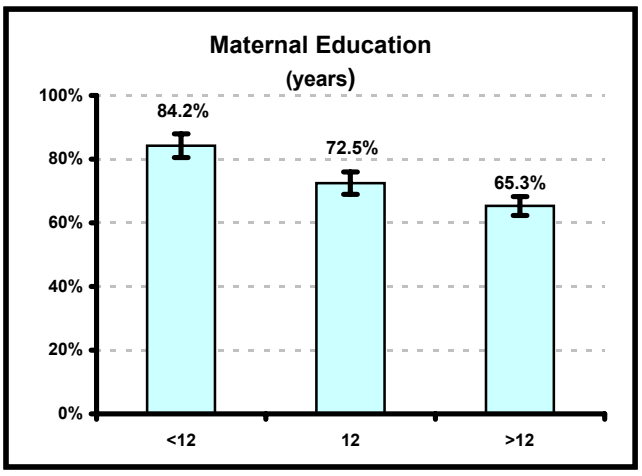
[g]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

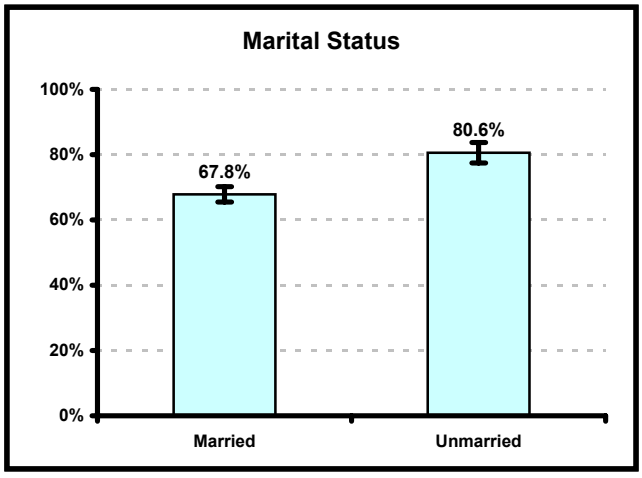
[h]Non-Medicaid - women not enrolled in Medicaid.

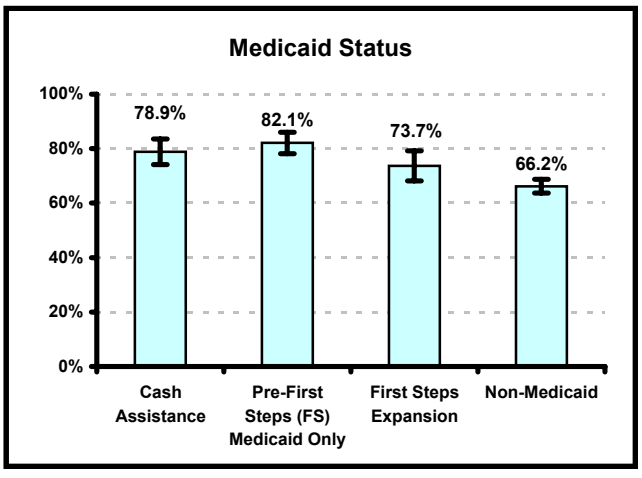
Figure 4.1: Women who reported a prenatal health care provider discussed how using illegal drugs could affect their baby
Washington State PRAMS 1996-1998











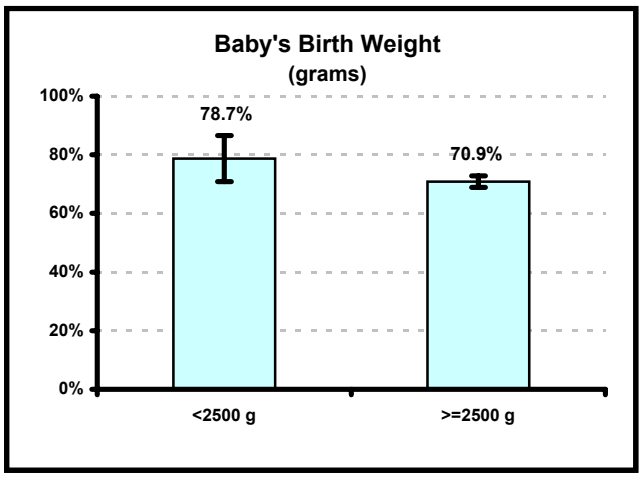
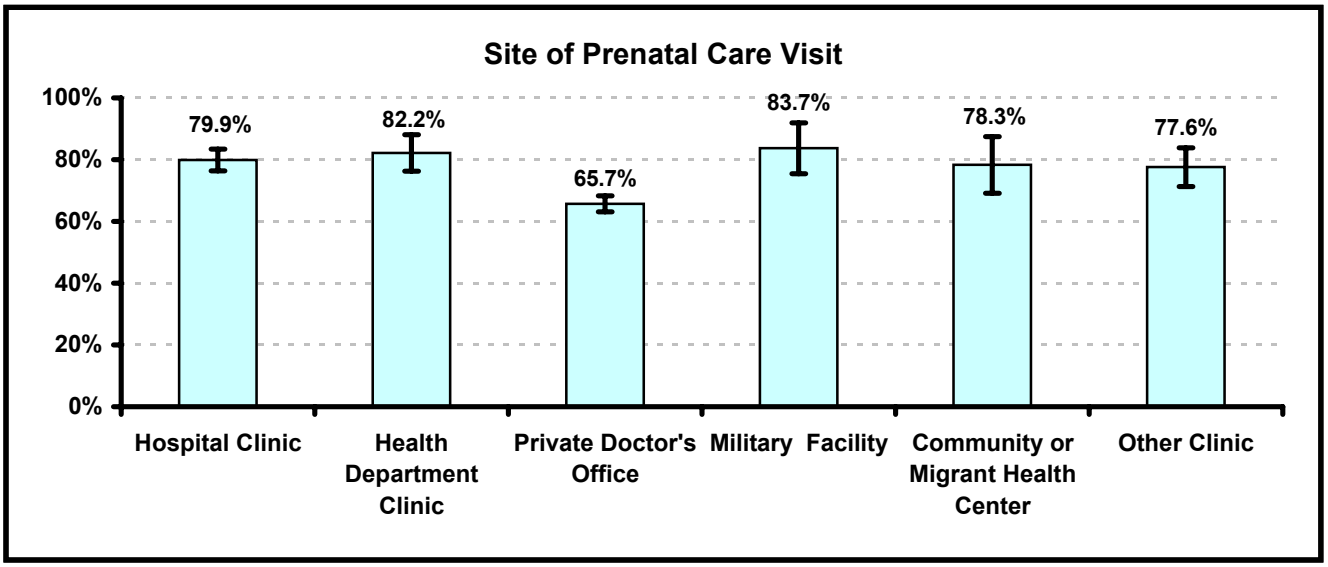


Figure 4.1 (cont'd): Women who reported a prenatal health care provider discussed how using illegal drugs could affect their baby
Washington State PRAMS 1996-1998



APPENDICES

WASHINGTON STATE PRAMS 1996-1998

Data Collection

Methodology

Data Sources. Three data sources are used to create a final, weighted PRAMS analysis data set: birth certificate data, operational data, and questionnaire data. The PRAMS analysis data set cannot be produced unless all three sources of data are in place.[1]

i. ***Birth Certificate Data.*** Birth certificates are essential to PRAMS data collection for three reasons: 1) They provide the sampling frame from which births are stratified and then randomly selected for PRAMS surveillance; 2) PRAMS data collected from mothers are weighted with birth certificate information; and 3) Birth certificates serve as a source of demographic and clinical information about the sampled mother and the infant in Washington State.

ii. ***Operational Data.*** PRAMS operational data are generated by PRAMTrac, a customized tracking software program developed by the CDC to assist the Project Coordinator and the Data Manager in PRAMS activities. PRAMTrac is supplied to states by CDC; CDC provides training in the use of the software. PRAMTrac aids in monitoring data collection activities for each batch and generates monthly batch reports that summarize the results of the data collection effort. Sampled women are tracked until they either complete a questionnaire or are classified as a non-respondent. Operational data generated by PRAMTrac are used to calculate response rates to monitor the quality of operations. They are also used for analysis of PRAMS survey methodology.

iii. ***Questionnaire Data.*** Self-reported data from sampled women are collected by mail and by telephone. The PRAMS questionnaire serves as the principal source of maternal behavioral information for the time before, during, and after the mother's most recent pregnancy.

Method of Surveillance. Standardized data collection methods for the PRAMS survey were developed by CDC to allow for comparisons among states and for single-state or multi-state analysis.[2] PRAMS is a "mixed mode" surveillance system that combines two modes of data collection. The mailed questionnaire is the primary data collection method. Up to two self-administered surveys are mailed to sampled women, and then multiple attempts to follow-up nonrespondents are conducted by telephone.[1,2,3] The methodology behind mail/telephone survey methods used by CDC is based on research conducted by Don Dillman.[4] One key component of his approach is to make numerous and varied random contacts with sample mothers.[3,4]

Data Collection Instruments

The PRAMS Questionnaire. In 1987, Phase 1 of the PRAMS questionnaire was developed with the aid of numerous individuals within and outside of CDC. To create the questionnaire, an extensive list of potential topics were identified and researched by staff in the Division of Reproductive Health at CDC. From this list, questions were developed and pretested using cognitive techniques and revised according to pretest results. This questionnaire was used by the original PRAMS states from Fall 1988 until it was revised in 1989.[1,2]

In 1989, the Phase 1 questionnaire was evaluated and revised by CDC and participating states. This revision resulted in the Phase 2 questionnaire, which was implemented in 1990. Although the questionnaire maintained its original structure, selected questions were revised, some were deleted, and new questions were added. [1,2]

In 1994, CDC collaborated with the participating states to revise and develop a Phase 3 questionnaire. As with the first and second questionnaires, a list of potential topics was extensively researched. The original structure of the questionnaire was retained, but several questions were revised, dropped or added.[1,2] During the revision process, a set of standard state-specific questions was developed. States were able to select questions from the standard set, use existing state-developed questions, or develop new questions of their own.[1]

The Phase 3 questionnaire is 14 pages in length and has a colorful cover designed by Washington State PRAMS staff. This questionnaire is slightly smaller than an 8 1/2" x 11" sheet of paper, and contains an extra page for comments from the mother. The questionnaire contains a total of 66 questions; the first 52 questions are core questions and the remaining 14 are state-specific questions.

The data for this report, which is from the surveillance period April 1996 through December 1998, have been drawn from the Phase 3 questionnaire.

Criteria for Selection of Questions. The following criteria were used to determine the content areas of the questionnaire[1]:

- ❒ The usefulness of the information to develop and target specific interventions to reduce infant morbidity and mortality.
- ❒ The likelihood that valid information can be collected from the mother two to six months after delivery.
- ❒ The estimated prevalence of the behavior, attitude, or experience.
- ❒ The availability of state-level information from other data sources.
- ❒ The importance of the information as a co-variate for the association between behavior, attitude, or experience, and infant morbidity and mortality.
- ❒ The likelihood that sensitive information can be elicited from the mother.

- ❒ The state's need for the information for the year 2010 health objectives or other program needs.

Types of Questions

Core Questions. The core portion of the survey is used by all participating PRAMS states and addresses the following topic areas:

- ❒ **Obstetric history/risk factors:** a history of previous live births, low birth weight newborn, premature delivery; confirmation of pregnancy status, prepregnancy weight and height.
- ❒ **Mother's feelings about the timing of pregnancy**
- ❒ **Maternal economic status:** Health insurance participation, Medicaid participation, WIC participation, housing density, household size after delivery, and sources of family income.
- ❒ **Birth control utilization at conception**
- ❒ **Prenatal care:** Timing of prenatal care initiation, satisfaction with prenatal care, barriers to prenatal care, number of prenatal care visits per month, site of prenatal care visit, source of prenatal care payment, and prenatal provider discussion of maternal risk behaviors.
- ❒ **Folic acid awareness**
- ❒ **Prenatal maternal behaviors and experiences:** Cigarette smoking, alcohol use, psychosocial stress during the 12 months prior to delivery, and physical abuse before and during pregnancy.
- ❒ **Prenatal hospitalization**
- ❒ **Labor and delivery for mother and infant:** Hospital length of stay for mother and infant, source of payment for delivery
- ❒ **Infant health:** Neonatal Intensive Care Unit (NICU) utilization, breast-feeding, infant smoke exposure, sleep position, well and ill baby care

State-Developed questions. The state-specific portion is composed of questions developed by the Washington State PRAMS Advisory Committee to meet Washington State's needs. The process for developing the questions involved: committee selection of high priority topics; development of questions pertaining to the priority topics; revision of questions to fit a survey format; and ranking questions to determine those to be included in the survey. After the questions were selected, the state-specific questions were pre-tested with a variety of individuals from various backgrounds. The Washington state-specific component covers the following topic areas:

- ❒ Mother's perception of husband or partner's feelings about timing of the pregnancy
- ❒ Household size and income at conception
- ❒ Prenatal health care provider discussion of maternal risk behaviors: Postpartum depression, weight gain during pregnancy, family history of diseases or birth defects, and genetic testing for birth defects or genetic diseases
- ❒ Social support availability for mother during pregnancy and after delivery
- ❒ Emotional support by husband or partner during pregnancy
- ❒ Hospital length of stay after delivery for mother
- ❒ Postpartum birth control utilization
- ❒ Infant safety: smoke alarm in home, water heater temperature, car seat use, and firearms in home

Mode of Questionnaire Administration. Survey methodology emphasized the importance of using the appropriate questionnaire format for the mode in which the respondent will complete the questionnaire. Because PRAMS employs two modes, two types of questionnaire are required.[1]

i. ***Self-administered Questionnaire.*** In mail surveillance, the self-administered questionnaire booklet is mailed to all sampled women. The questionnaire is designed to be read and filled out by the respondent without the presence of an interviewer. All instructions and skips are clearly noted in the booklet so that the respondent can complete the questionnaire by herself.

ii. ***Interviewer-administered Questionnaire.*** In telephone follow-up, however, an interviewer must administer the questionnaire. Therefore, the layout must be formatted differently than the self-administered questionnaire. The interviewer-administered questionnaire includes prompts and instructions for the interviewer that are not read aloud to the respondent. The interviewer-administered questionnaire format ensures that all interviewers deliver questions and instructions uniformly and consistently with the self-administered questionnaire.

Translation of Questionnaires. The Washington State PRAMS questionnaire is available in English and Spanish. Formatting and appearance are the same in both versions of the questionnaire. Translation of the PRAMS questionnaires (mail and telephone versions) into Spanish are completed by CDC, with state reviewers. Translation of the questionnaires by a single source ensure consistency of question content across all states and populations.

Data Collection Procedures

Timing and Contacts. Every month, a stratified random sample of 100-250 new mothers (who are two to six months postpartum) is selected from a frame of eligible Washington State birth certificates to be used for the PRAMS survey. As multiple contacts have been demonstrated to increase response rates,[4] this methodology is employed in PRAMS. Below is the sequence of contacts for Washington State PRAMS surveillance.[1,2,3]

i. ***Preletter.*** The preletter is mailed to all sampled mothers. The preletter introduces the mother to PRAMS and informs her that she will be receiving a PRAMS questionnaire packet in the mail.

ii. ***Initial PRAMS Questionnaire Packet.*** The initial mail questionnaire packet is sent to all sampled mothers 7 days after the preletter. The packet contains the following items: a personalized letter explaining PRAMS; the 14-page questionnaire booklet containing a self-addressed stamped enveloped; a question-and-answer brochure that contains addition information and answers to questions frequently asked about PRAMS; a calendar, as a memory aid; and a participation incentive.

iii. ***Tickler (Reminder Letter).*** The tickler serves as a thank you/reminder letter and is sent to all sampled mothers 10 days after the initial mailing, except for those who have responded, refused, or whose mail has been returned undelivered.

iv. ***Second Mail Questionnaire Packet.*** The second mail questionnaire packet is sent 14 days after the tickler to all sampled mothers who have not responded or refused.

v. ***Telephone Follow-up.*** Washington State PRAMS staff telephone mothers who do not respond 14 days after the second mailing of the questionnaire. Interviewers call women to encourage completion of an interviewer-administered survey over the telephone.

Mail/Phone schedule. The Mail/Phone phase of the project is managed by the Operations Manager. The Operations manager coordinates the activities of the Survey Assistants, who assist with the mailings, data entry and telephone interviews. The following is a list of the schedule of events for the Mail/Phone Survey process the batch period[1]:

- ❒ **Day 1:** Sample batch and create: BCENTRY.DAT, list of long addresses, list of infants at risk of death, list of Medicaid recipients, and a list of Hispanic mothers in sample. Download BCENTRY.DAT into PRAMTrac.
- ❒ **Day 2:** Clean up any mothers' records with blank last name, correct addresses, eliminate any out of state residents, etc.
- ❒ **Day 3:** Prepare and mail pre-letter. Identify/verify status of at risk infants.

- ❒ **Day 10:** Prepare and mail the first survey with a return address packet. Identify multiple births and select which infant to follow in the survey.
- ❒ **Day 20:** Prepare and mail a reminder letter (Tickler).
- ❒ **Day 34:** Prepare and mail second survey with return address packet.
- ❒ **Day 41:** Forward to phone phase. Print a listing of new moms and begin locating phone numbers. Check Internet listings or contact Directory Assistance and Medical Assistance Administration for additional phone listings.
- ❒ **Day 48:** Begin calling moms. During the next 3 weeks, at least 15 attempts are made to contact the mother. Calls are made during the morning, afternoon and evening, seven days a week. Calls are conducted both to English and Spanish speaking survey recipients.
- ❒ **Day 75:** Clean up, close the batch, and export the files to CDC as identified in CDC instructions.

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS): CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1999.

[2] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[3] Colley Gilbert B, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

[4] Dillman DA. Mail and telephone surveys: the total design method. New York: John Wiley & Sons, 1978.

Sampling and Weighting Process

The purpose of the PRAMS data is to provide state-specific estimates of maternal and child health indicators for Washington State mothers who delivered a live born infant.

Sampling Process

Producing a sample of mothers has two steps: constructing the frame and drawing the sample.

Constructing the Sampling Frame. The sampling frame is prepared from monthly batches of Washington State birth certificates. Birth data are read into a SAS file that creates five categories by race/ethnicity. The sampling frame is then created by excluding records for the following reasons: 1) the infant was born less than 61 days ago (these infants were eligible for inclusion in a later sampling frame) or more than 151 days from the projected survey arrival date; 2) the infant was born out of state; 3) the mother was not a Washington State resident; 4) the mother's maiden name was missing; or 5) the infant resulted from a multiple birth and was not the one infant from the multiple birth selected for inclusion in the survey. The infant record selected from a multiple birth is based on the correspondence between its order at delivery and the time of year the birth occurred (the first born of twins is selected if the birth occurred January-June, the second born is selected if the birth occurred July-December). (NOTE: Exclusions of Adoptions: If an infant is adopted prior to sampling, the birth record is excluded from the sampling frame. Birth files are amended when an adoption takes place. Adoptions are identified and excluded by Vital Statistics prior to sending the birth certificate date to Washington State PRAMS. Adoptions records are continuously updated).[1] For those infants who were not included in the PRAMS sample, efforts were made to compare their profile as a group to the PRAMS frame and to determine whether the population and sample strata differ significantly from the frame. Mothers of infants who died were included in the frame and were contacted through a separate mailing. Respect for their loss and sensitivity in questioning was considered when contacting these mothers.[2]

Drawing the sample. Between the 1st and the 5th of every month, the Washington State Center for Health Statistics sends a birth certificate file to be used as input for the PRAMS sampling program. Most of the infants in the birth certificate files are either two or three months of age when sampled by PRAMS and mothers are contacted up to six months postpartum. Sampling on a monthly basis continues to ensure that mothers are contacted in a timely manner and that there is a balanced workload for PRAMS staff. The birth file is sent for weighting on or before September for the previous year.[1]

Sampling Strata

The Washington State PRAMS sample for this report was stratified by race/ethnicity, based on birth certificate information. From April 1996 through December 1998, the five sampling strata of racial/ethnic groups were ethnic Hispanic (of any race), non Hispanic African American,

Asian/Pacific Islander, Native American and the combination of white and other/unknown. Oversampling of subjects by race other than white was conducted to increase the reliability of estimates for these groups.[1]

Within each sampling strata, each record has an equal probability of being selected (without replacement). The sampling targets for each stratum were 400 completed surveys, a total of approximately 2,000 surveys per year. This sampling target is CDC PRAMS minimum recommended sample size to enable stratum specific analyses on a yearly basis.[1]

Survey Response Rates

From April 1996 through December 1998, 8,563 mothers who delivered infants were sent the Washington State PRAMS survey. Among those mothers who were surveyed, 6,034 (70.5%) responded to the survey. The majority of nonrespondents to the survey were comprised of mothers who did not return the questionnaire or could not be contacted because of incorrect address and/or phone number. Other possible reasons that may explain the survey nonresponse rate are phone and mail refusals, or a language barrier.

In late 1993, Spanish language surveys and Spanish language phone follow-up became available which contributed to an improvement in the Hispanic response rate. Translation to other non-English speaking populations is not available at this time for states participating in PRAMS.

Birth certificate information from non-respondent and respondent mothers to the PRAMS survey, which was administered from April 1996 through December 1998, is displayed in Table 7.1. The results show that maternal attributes associated with a lower survey response rate were maternal age younger than 20, African American and Native American race, unmarried, receiving Medicaid, and having delivered a low birth weight infant (< 2500 grams). However, the survey response rates increased with mother's educational level. Approximately 12.8% of the maternal education data was missing from the Washington State birth certificates.

Response Bias. When survey completion is less than 100 percent and respondents are not representative of the sampled population, response bias can occur. (In most cases, survey respondents are of higher socio-economic status and healthier than are nonrespondents to questionnaires). Response bias can be reduced by ensuring a high response rate. The CDC PRAMS considers a response rate of 70 percent as a minimum threshold below which unacceptable response bias may occur.[2]

Weighting Process

The Washington State PRAMS survey is designed to provide state estimates about resident mothers who delivered live born infants during the sampling period. Washington State PRAMS data can be weighted to obtain statewide birth population estimates, because the data are based on a probability sample of Washington State birth certificates.

Each PRAMS respondent receives an analysis weight, which is equivalent to the number of mothers that she represents in the population. The analysis weight is the product of three sub-components: sampling weight, nonresponse weight, and frame noncoverage weight.[2] An

analysis weight of zero was assigned to mothers who did not respond to the PRAMS questionnaire.

i. ***Sampling Weights.*** The sampling weights adjust for the effect of the sampling design. The sampling weights are calculated by dividing the number of mothers on the sampling frame for a given stratum by the number of mothers sampled for that stratum. This weight is the reciprocal of the sampling fraction for the sample, in each sampling stratum. Failure to apply sampling weights to the data may result in biased population estimates.

ii. ***Nonresponse Weight.*** In PRAMS, four ethnic minorities are oversampled, to increase their numbers for analysis in this survey. Survey response rates vary by sampling stratum. The nonresponse weight is the ratio of the sample size in a stratum-specific response category to the number of respondents in the same category. The rate of response within a given stratum determines the magnitude of adjustment for nonresponse. Nonresponse weighting is conducted by increasing the weight of respondents that are similar to nonrespondents on known birth certificate information. From previous analyses of the 1993-1994 Washington State PRAMS survey, even after nonresponse adjustment is performed, PRAMS estimates may underestimate population risk for some measures because higher-risk women are less likely to respond even within groups distinguished by nonresponse.

Frame Noncoverage Weight. Each year, Washington State sends the calendar year birth tape to CDC where it is compared to the frame files for that given year of births. Frame noncoverage weights are created to adjust for omission of birth records in the sampling frame. The effect of the frame noncoverage weight is to ensure that the totals estimated from the sample data are similar to the totals from the birth tape.

Estimating Standard Errors for PRAMS Data

The standard error is a measure of the average deviation of summary statistics (means, proportions, rates) around their mean.[3] Differential probabilities of selection increase the sampling error when estimating population parameters over aggregated sampling strata.[2]

To account for the complex sampling design of PRAMS, the Washington State Department of Health and the CDC recommend using the statistical software packaged “Software for Survey Data Analysis" (SUDAAN). SUDAAN was developed by the Research Triangle Institute in collaboration with the National Center for Health Statistics and other Public Health Service agencies. It uses first-order Taylor series approximations to calculate sampling variances and standard errors for the population estimates.[4] Standard errors are used to calculate 95% confidence intervals (CI = percentage $\pm$ (1.96 * standard error)).[1,4]

In the 1996-1998 Washington State PRAMS Surveillance Report, 95% confidence intervals are presented for all population estimates. Confidence intervals that overlap indicate that the sampling values of the strata being compared are not statistically different from each other, and are unable to support inference that the population estimates of those strata are in fact different.[2]

Confidence intervals estimate the range of values, which includes the true population estimate for that indicator.[1,4] However, confidence intervals can not be used to determine other possible sources of bias in an estimate, such as non-response bias, recall bias, failure to understand questions, and socially approved response bias.[2]

Recall Bias

PRAMS data are self-reported and are based on events and feelings of women surveyed that may have occurred more than a year prior to the implementation of the survey. Recall bias may occur if the respondents do not accurately remember prior events. Events that occurred before conception or early in pregnancy will tend to be more misreported than events that occurred near to the time that the PRAMS survey was completed. Survey respondents may also be less likely to report or may deny socially disapproved behaviors (e.g. smoking and drinking during pregnancy) in order to minimize involvement with this risky behavior. Therefore, PRAMS data regarding smoking and drinking behaviors may be underreported as most pregnant women are warned about the effects of exposing the fetus to tobacco and alcohol.[2]

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS): CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1999.

[2] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[3] Rosenburg D and Handler A. Descriptive Epidemiology and Statistical Estimation, In: Analytic Methods in Maternal and Child Health, Handler A., Rosenburg, D., Monahan, C., and Kennelly, J. (eds.), Maternal and Child Health Bureau, HRSA, DHHS, 1998.

[4] Colley Gilbert B, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

Table 5.1: Survey Response Rates

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Total Surveyed	Respondents (N)	Respondents (%)	Non-Respondents (N)	Non-Respondents (%)
Total	8,563	6,034	70.5	2,529	29.5
Maternal Age					
<20 years	1,431	1,021	71.3	410	28.7
20-24 years	2,325	1,557	67.0	768	33.0
25-34 years	3,992	2,876	72.0	1,116	28.0
35+ years	813	579	71.2	236	28.8
Missing	2	1	50.0	1	50.0
Race/Ethnicity					
White	1,712	1,410	82.4	302	17.6
African American	1,551	969	62.5	582	37.5
Native American	1,970	1,252	63.6	718	36.5
Asian/Pacific Islander	1,713	1,208	70.5	505	29.5
Hispanic	1,617	1,195	73.9	422	26.1
Missing	0	0	0.0	0	0.0
Maternal Education[b]					
<12 years	2,095	1,323	63.2	772	36.8
12 years	2,449	1,717	70.1	732	29.9
>12 years	2,923	2,331	79.8	592	20.3
Missing	1,096	663	60.5	433	39.5
Marital Status					
Married	5,114	3,842	75.1	1,272	24.9
Unmarried	3,433	2,181	63.5	1,252	36.5
Missing	16	11	68.8	5	31.3
Medicaid Status					
Medicaid[c]	4,874	3,201	65.7	1,673	34.3
Cash Assistance[d]	1,955	1,137	58.2	818	41.8
Pre-First Steps (FS) Medicaid Only[e]	1,845	1,266	68.6	579	31.4
First Steps Expansion[f]	1,074	798	74.3	276	25.7
Non-Medicaid[g]	3,658	2,817	77.0	841	23.0
Missing	31	16	51.6	15	48.4
Baby's Birth Weight (grams)					
Low Birth Weight (<2500 g)	541	355	65.6	186	34.4
Normal Birth Weight (≥2500 g)	8,000	5,664	70.8	2,336	29.2
Missing	22	15	68.2	7	31.8

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birth weight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; and prenatal care sites from PRAMS. White includes other/unknown (3.5%).

[b]10% or more of the Maternal Education data are missing from birth certificate data.

[c]Medicaid - women in Cash Assistance, Pre-First Steps (FS) Medicaid Only, and First Steps Expansion.

[d]Cash Assistance - very low income women (below 65% of the federal poverty level) eligible for cash assistance and Medicaid.

[e]Pre-First Steps (FS) Medicaid Only - low income women (below 90% of the federal poverty level) eligible for Medicaid Only. This group includes women not eligible for cash assistance.

[f]First Steps Expansion - women eligible for Medicaid with incomes below 185% of the federal poverty level, but not in the Cash Assistance or FS Medicaid Only groups.

[g]Non-Medicaid - women not enrolled in Medicaid.

Trend Data

In Table 6.1, results from questions that were asked in both Phase II (January 1994 through March 1996) and in Phase III (April 1996 through December 1998) of the PRAMS questionnaire were compiled to provide trend data.

Table 6.1: Trend Data for Selected Topics

Washington State PRAMS 1994-1998

	1994 (% Yes)	1995 (% Yes)	1996 (% Yes)	1997 (% Yes)	1998 (% Yes)	1994-1998 (% Yes)
Tobacco Use						
Ever Smoked at Least 100 Cigarettes During Entire Life	45.7 (±1.8)	38.1 (±1.7)	36.4 (±1.7)	39.3 (±1.7)	36.7 (±1.6)	39.2 (±0.8)
Cigarette Smoking Three Months Before Pregnancy	29.9 (±1.8)	23.9 (±1.6)	24.6 (±1.6)	24.4 (±1.5)	25.8 (±1.5)	25.7 (±0.7)
Cigarette Smoking During the Last Three Months of Pregnancy	18.4 (±1.6)	14.7 (±1.3)	12.0 (±1.2)	12.9 (±1.2)	13.0 (±1.2)	14.1 (±0.6)
Cigarette Smoking at Postpartum	24.6 (±1.7)	19.1 (±1.5)	17.3 (±1.4)	18.4 (±1.4)	17.9 (±1.3)	19.4 (±0.7)
Alcohol Use						
Alcohol Consumption Three Months Before Pregnancy	57.3 (±1.8)	49.8 (±1.7)	49.6 (±1.7)	46.5 (±1.7)	44.3 (±1.7)	49.4 (±0.8)
Alcohol Consumption During the Last Three Months of Pregnancy	7.8 (±1.1)	8.2 (±1.0)	8.3 (±1.0)	6.2 (±0.9)	3.9 (±0.7)	6.8 (±0.4)

Note: PRAMS data from questions that were asked in Phase II (January 1994 through March 1996) and in Phase III (April 1996 through December 1998) surveys were compiled to provide trend data.

Summary of Results:

Tobacco Use

- ❒ The proportion of women who reported smoking at least 100 cigarettes in their entire life has declined significantly from 45.7 percent in 1994 to 36.0 percent in 1998.
- ❒ The proportion of women who reported smoking in the three months of pregnancy declined significantly from 29.9 percent in 1994 to 25.8 percent in 1998.
- ❒ A significant decline in the proportion of women who reported smoking cigarettes in the last three months of pregnancy occurred from 1994 (18.4%) through 1998 (13.0%).
- ❒ Women's report of smoking cigarettes in the postpartum period significantly decreased from 24.6 percent in 1994 to 17.9 percent in 1998.
- ❒ Between 1994-1998, Washington State women decreased their amount of smoking while pregnant from 25.7 percent to 14.1 percent; however, the rates increased after delivery to 19.4 percent.

Alcohol Use

- ❒ Maternal drinking during the three months before pregnancy significantly decreased from 57.3 percent in 1994 to 44.3 percent in 1998.
- ❒ Washington State women decreased their third trimester alcohol use significantly from 7.8 percent in 1994 to 3.9 percent in 1998.

Technical Notes

Below are the topics covered in volume one through four of the 1996-1998 Washington State PRAMS Surveillance Report:

Volume I

- ❒ Folic Acid Awareness
- ❒ Pregnancy Intention and Birth Control Use
- ❒ Prenatal Care
- ❒ Hospital Stays for Labor and Delivery
- ❒ Breast-feeding

Volume II

- ❒ Tobacco Use and Infant Exposure to Cigarette Smoke
- ❒ Alcohol Use
- ❒ Illegal Drug Use

Volume III

- ❒ Selected Maternal Risk Factors Discussed by Prenatal Health Care Providers

Volume IV

- ❒ Physical Abuse Around the Time of Pregnancy
- ❒ Infant Safety
- ❒ Infant Sleep Position
- ❒ Stress and Social Support

States Participating in PRAMS from 1996-1998

Alabama	Louisiana	Washington
Alaska	Maine	West Virginia
Arkansas	New Mexico	
Colorado	New York (excluding NYC)	
Florida	North Carolina	
Georgia	Oklahoma	
Illinois	South Carolina	

For more information on PRAMS programs in other states, please contact the Centers for Disease Control and Prevention (CDC) at:

http://www.cdc.gov/nccdphp/drh/srv_prams.htm.

Web Sites

CDC PRAMS web site: http://www.cdc.gov/nccdphp/drh/srv_prams/

Washington State PRAMS web site: http://www.doh.wa.gov/cfh/prams/

Washington State Department of Health website: http://ww.doh.wa.gov/

Note: The Washington State PRAMS Surveillance Report – Volume II will be available on the Washington State Department of Health web site by May 2002.