



PRAMS

Perinatal Substance Use Fact Sheet

Pregnancy Risk Assessment Monitoring System

Perils of Perinatal Substance Use

The use of substances during pregnancy is linked to adverse birth outcomes and developmental/behavioral problems, including fetal growth restriction, low birth weight (<2,500 grams), birth defects, and mental retardation.^{1,2} Smoking and drinking during pregnancy, respectively, are considered the largest preventable causes of neonatal morbidity and mental retardation in developed countries. Any consumption of alcohol at any time during pregnancy is considered unsafe to the developing fetus. Research has determined that binge drinking, defined as 4 or more drinks in one sitting, during early pregnancy is especially harmful for the fetus.^{1,3} Even after pregnancy, secondhand exposure to smoke increases the risk of childhood respiratory illnesses, ear infections, and sudden infant death. Women often do not realize they are pregnant for several weeks or months after conception so it is important to examine reported substance use prior to and during pregnancy. The National Healthy People 2010 objectives were to increase abstinence in pregnancy to 99% for smoking, to 94% for alcohol use, and to 100% for illicit drugs.

Prevalence and Cessation Rates of Substance Use

In Hawai'i, about 1 in 5 women (~20%) reported smoking, almost 1 in 2 (47%) reported drinking in the 3 months prior to pregnancy, while the self-reported use of any illicit drugs (was 6% in the 12 months prior to pregnancy). These behaviors change during pregnancy with 9% smoking and 6% drinking during the last trimester. The use of illicit drugs is reported by 3% of mothers at any time during the pregnancy. The cessation rate reflects the proportion of women who quit among those that reported doing the behavior prior to the pregnancy. For smoking, the cessation rate was 58.2%, reflecting the proportion that still smoked in the last trimester. Unfortunately, only 35.7% of those who smoked prior to pregnancy report not smoking 3-6 months postpartum. For drinking, 87.7% of those who reported drinking in the month before pregnancy reported no longer drinking in the last trimester. Among those using illicit drugs, the cessation rate was 62.2%.

Data Highlights

- Prior to pregnancy, about 20% of women reported smoking, 47% reported drinking, and 6% of women reported using illicit drugs
- During pregnancy, 9% of women smoked, 6% drink alcohol, and 3% used illicit drugs
- Close to 60% of smokers report not smoking the last trimester, but many resume in the postpartum period
- Women who used substances during pregnancy tended to be younger, less educated, and unmarried
- Risks related to substance use during pregnancy included having an unintended pregnancy, receiving late or no prenatal care, and delivering a low birth weight infant
- About 70% of women reported being counseled by a health care worker on the risks of using substances during pregnancy

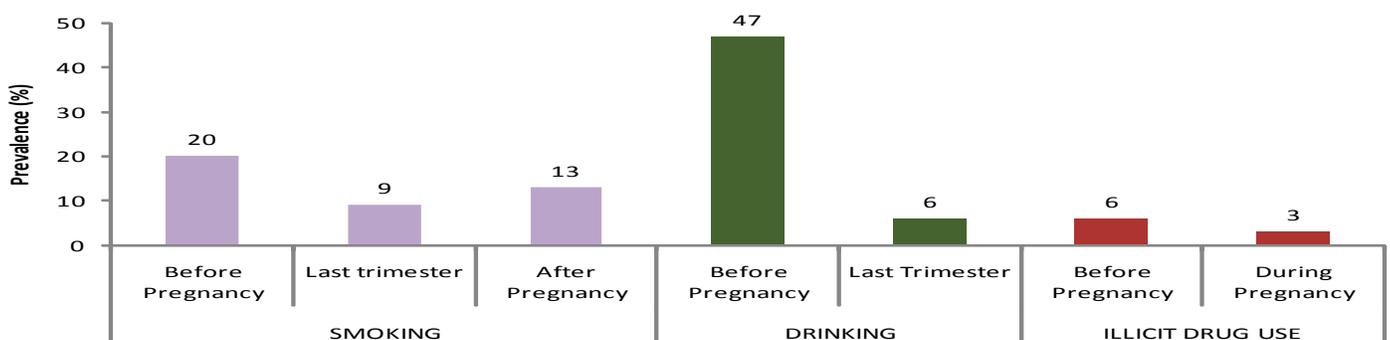
Cessation Rates in Pregnancy, Hawai'i PRAMS 2004-2008

Among Smokers before Pregnancy	
Cessation in pregnancy	58.2%
Cessation 3-6 months postpartum	35.7%
Among Drinkers before Pregnancy	
Cessation in pregnancy	87.7%
Among Illicit Drug users before Pregnancy	
Cessation in pregnancy	62.2%

"I would like to say this to those that like to smoke a lot or "say cannot quit" there's a cure."

--Hawai'i PRAMS Participant

Perinatal Substance Use, Hawai'i PRAMS 2004-2008



“I think there should be more information made available to pregnant mothers about the dangers of smoking during pregnancy. I don’t think this information is as available to younger mothers as it was to me growing up.”

--Hawai'i PRAMS Participant

Perinatal Risks and Counseling Related to Substance Use

Women who reported drinking in the last trimester of pregnancy were more likely to have an infant born of low birth weight compared to those who did not drink in the last trimester. Women who smoked in the last trimester were more likely to have experienced an unintended pregnancy, receive late or no prenatal care, deliver a low birth weight infant, and never breastfed, compared to those who did not smoke in the last trimester. Women who used illicit drugs during the pregnancy were more likely to have experienced an unintended pregnancy, receive late or no prenatal care, deliver a low birth weight infant, and never breastfed compared to those who did not report using illicit drugs during the pregnancy.

Overall, about 70% of women reported being counseled by a health care provider on the dangers of drinking, smoking, and using illicit drugs during pregnancy. Counseling on the effect of alcohol use among those who reported drinking during pregnancy was similar compared to those that did not drink during pregnancy. Counseling on the effects of smoking was higher in those that smoked in the last trimester compared to those that did not smoke. Counseling on drug use was higher among those who used illicit drugs during pregnancy compared to those that did not. Thus, it is reassuring that women who smoked or used illicit drugs received greater counseling on the impact that their substance could have, but it is still concerning that counseling on the dangers of substance use was not uniformly reported by all groups regardless of self-reported substance use.

Prenatal Counseling on Substance Use, Hawai'i PRAMS 2004-2008

Counseled on Drinking	
Drinking Last Trimester	71.0%
No Drinking	72.9%
Counseled on Smoking	
Smoking Last Trimester	91.2%
Non-Smoker	70.9%
Counseled on Drug Use	
Drug Use During Pregnancy	71.4%
No Drug Use	66.8%

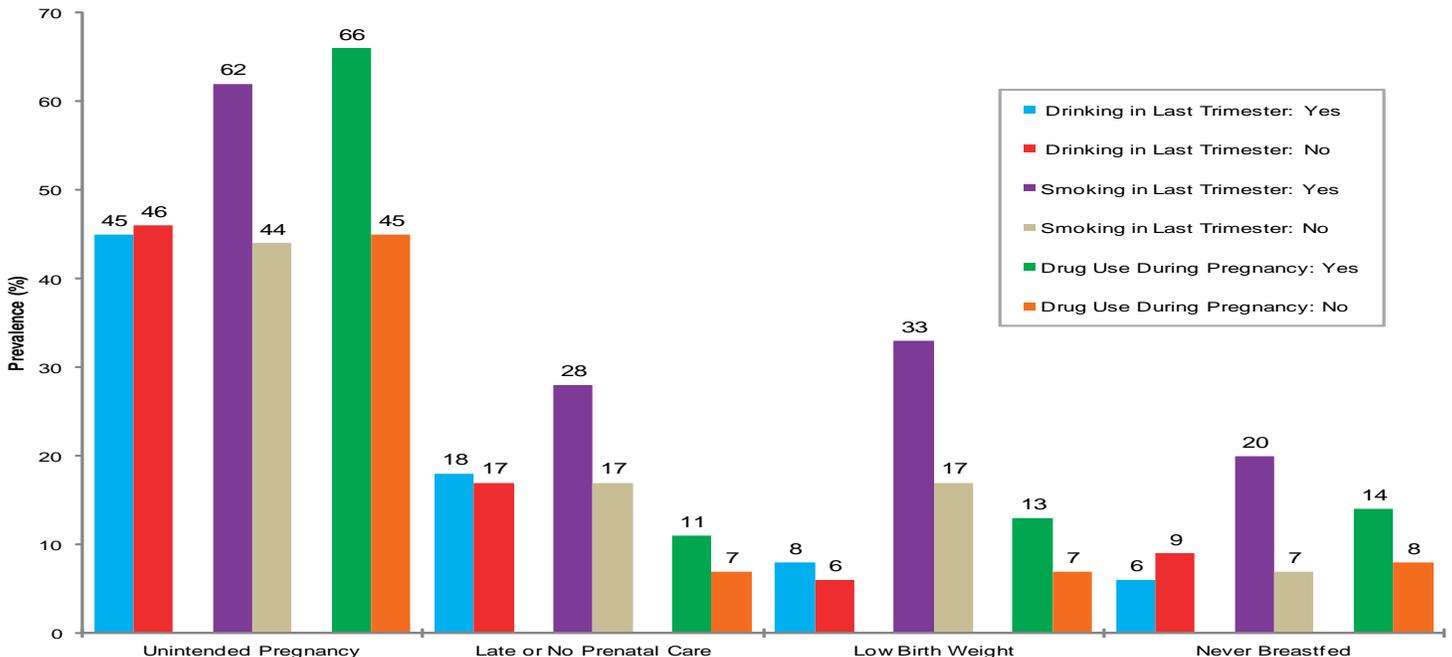
“Doctors need to advise pregnant women about the dangers of drinking alcohol, using drugs, and smoking. With the huge drug problem in Hawai'i every doctor should make it a point to still advise about the dangers to babies.”

--Hawai'i PRAMS Participant

Maternal Characteristics Related to Perinatal Substance Use

Women more likely to drink in the last trimester of pregnancy were White, Korean, under 35 years of age, less educated, unmarried, and were Medicaid/QUEST insured prior to pregnancy. Women more likely to smoke in the last trimester were Samoan, Hawaiian, younger than 25 years of age, had not graduated high school, were unmarried, of higher parity, and were Medicaid/QUEST insured or had no insurance prior to pregnancy. Drug use during pregnancy was more common among women who were Black, Hawaiian, younger than 25 years of age, had not graduated high school, were not married, were Medicaid/QUEST insured or had no insurance prior to pregnancy, and lived in Kauai, Hawai'i or Maui County.

Perinatal Risks Related to Substance Use, Hawai'i PRAMS 2004-2008



Estimates of Perinatal Substance Use by Maternal Characteristics, Hawai'i PRAMS 2004-2008

	Drinking in the Last Trimester % (95% CI)*	Smoking in the Last Trimester % (95% CI)	Drug Use During Pregnancy % (95% CI)
Race/Ethnicity			
White	10.9 (9.5-12.3)	7.4 (6.3-8.7)	2.7 (2.0-3.5)
Black	3.1 (1.3-7.0)	5.4 (2.9-10.0)	6.8 (3.9-11.6)
Hispanic	5.3 (2.6-10.4)	5.7 (2.9-10.7)	0.7 (0.1-4.5)
Hawaiian	5.0 (4.1-6.0)	13.9 (12.4-15.5)	3.9 (3.1-4.9)
Samoan	3.8 (2.0-7.3)	16.1 (11.8-21.5)	1.5 (0.5-4.3)
Other Pacific Islander	4.0 (2.4-6.4)	3.5 (2.0-5.9)	1.7 (0.8-3.6)
Filipino	3.6 (2.8-4.5)	4.8 (3.9-5.9)	1.3 (0.9-2.0)
Japanese	5.2 (4.1-6.7)	7.0 (5.5-8.8)	2.1 (1.3-3.2)
Chinese	4.3 (3.3-5.6)	1.8 (1.2-2.8)	1.1 (0.7-1.9)
Korean	8.7 (6.6-11.4)	7.4 (5.5-10.0)	2.3 (1.3-4.1)
Other Asian	2.9 (1.1-7.4)	4.4 (2.0-9.2)	2.5 (1.0-6.1)
Maternal Age			
Under 20 years	2.6 (1.6-4.2)	10.9 (8.6-13.6)	5.2 (3.7-7.2)
20-24 years	4.5 (3.7-5.5)	11.0 (9.7-12.5)	3.4 (2.6-4.3)
25-34 years	6.0 (5.3-6.7)	7.9 (7.1-8.8)	2.3 (1.9-2.8)
35 or more years	8.8 (7.5-10.2)	5.8 (4.8-7.1)	1.6 (1.1-2.4)
Maternal Education			
< High School	4.4 (3.2-6.2)	17.9 (15.3-20.8)	5.1 (3.7-7.0)
High School	4.6 (3.9-5.4)	11.7 (10.6-12.9)	3.3 (2.7-3.9)
Some College	6.1 (5.2-7.1)	7.0 (6.0-8.1)	2.3 (1.8-3.1)
College Graduate	8.1 (7.1-9.3)	1.5 (1.1-2.1)	1.1 (0.8-1.6)
Marital Status			
Married	6.2 (5.6-6.8)	5.2 (4.6-5.8)	1.2 (0.9-1.5)
Unmarried	5.2 (4.4-6.1)	14.6 (13.3-16.0)	5.3 (4.5-6.2)
Parity			
First Birth	5.7 (5.0-6.5)	6.2 (5.4-7.1)	3.3 (2.7-3.9)
Second or Third	6.2 (5.5-7.0)	8.8 (8.0-9.8)	2.0 (1.6-2.5)
Fourth or More	4.9 (3.7-6.5)	16.0 (13.8-18.6)	3.5 (2.4-4.9)
Health Insurance Prior to Pregnancy			
Private Insurance	6.5 (5.9-7.1)	5.2 (4.7-5.9)	1.6 (1.3-2.0)
Medicaid/QUEST	4.1 (3.2-5.2)	18.0 (16.1-20.1)	4.8 (3.8-6.1)
None	5.3 (4.1-6.8)	11.7 (9.9-13.8)	4.7 (3.6-6.2)
County of Residence			
Hawai'i	5.7 (4.4-7.2)	11.9 (10.0-14.1)	4.0 (3.0-5.4)
Honolulu	5.5 (5.0-6.1)	8.0 (7.4-8.8)	2.0 (1.7-2.4)
Maui	7.6 (6.1-9.5)	8.1 (6.5-10.2)	3.9 (2.8-5.4)
Kauai	7.1 (5-10.1)	7.9 (5.6-11.2)	5.9 (3.9-8.8)
Overall	5.9 (5.4-6.4)	8.6 (8.0-9.2)	2.7 (2.3-3.1)

*note 95% CI refers to the 95% confidence interval around estimate.

About the Data

The Hawai'i Pregnancy Risk Assessment Monitoring System (PRAMS) is a self-reported survey of recent mothers conducted by mail with telephone follow-up. It is designed to monitor the health and experiences of women before, during, and just after pregnancy. Every year, about 2,000 women who deliver a live infant are randomly selected to participate. In this analysis, measures of alcohol intake, smoking, and illicit drug use (marijuana, amphetamines, cocaine, tranquilizers, hallucinogens, or sniffing products) were all self-reported. Analysis focused on drinking and smoking in the last trimester, and on drug use during pregnancy.

Discussion

About 1 in 5 women in Hawai'i smoked, about 1 in 2 women drank alcohol, and about 1 in 16 women used illicit drugs prior to pregnancy. The vast majority change their behavior during the pregnancy. However, there is a high likelihood of alcohol exposure during the early, vulnerable period of fetal development since the majority of births to women who drank were unintended. Although more than half of smokers quit by the last three months of pregnancy, only a third remained smoke free in the postpartum period when infants can suffer respiratory afflictions, sudden unexplained infant death, and other health problems related to secondhand exposure.

Greater physician counseling on family planning and substance use among all women of reproductive age could help reduce perinatal substance exposure and its adverse consequences. For example, physician screening tools and brief interventions, when sensitively employed, have been shown to be effective in identifying women who use substances and helping them to quit.^{2,3} Every dollar spent on cessation interventions for pregnant smokers is estimated to save \$3 in neonatal costs.² Comprehensive Medicaid coverage for smoking interventions has been linked to higher quit rates;⁴ yet reimbursement for these services in Medicaid/QUEST is left to the discretion of the managed care plan. Physicians and others that care for pregnant mothers and their children should be aware of referral services available including those that provide free counseling and cessation interventions. In 2006, Hawai'i implemented an aggressive public smoking ban to encourage smoking cessation. Additionally, the Family Health Services Division provides funding to providers to screen for substance use and provide services through its Perinatal Support Services and Family Planning programs.

This analysis highlights estimates of perinatal substance use among women who recently had a live birth and provides important information on characteristics associated with the individual substances. This may help bring an increased awareness and discussion on the use of substances before, during, and after pregnancy. However, it is important to realize that these are probably underestimates as people may under or not even report the use of substances around pregnancy. Thus, it is important to screen and counsel all women on the adverse effects of substance use.

Care of women during pregnancy and the postpartum period presents opportunities to promote life-long healthy behaviors. Encouraging women to build on their success at refraining from smoking, alcohol use, and illicit drugs during pregnancy and adopting healthy behaviors beyond the pregnancy will improve the health of families in Hawai'i.

References

- 1 Chiriboga C. Fetal alcohol and drug effects. *The Neurologist*. 2003;9(6):267-79.
- 2 Frohna JG, Lantz PM, Pollack H. Maternal substance abuse and infant health: policy options across the life course. *Milbank Quarterly*. 1999;77(4):531-70.
- 3 Chasnoff IJ, et al. The 4P's Plus screen for substance use in pregnancy: clinical application and outcomes. *Journal of Perinatology*. 2005;25(6):368-74.
- 4 Petersen R, Garrett JM, Melvin CL, Hartmann KE. Medicaid reimbursement for prenatal smoking intervention influences quitting and cessation. *Tobacco Control* 2006;15:30-34.

Some Resources

Hawai'i Tobacco Quit Line

www.CallitQuitsHawaii.org

1-800-QUIT-NOW (783-8669)

"IT'S FREE, CONFIDENTIAL, SIMPLE."

Healthy Mothers, Healthy Babies

www.hmhb-Hawaii.org

808-951-5805

"PROMOTING REPRODUCTIVE & PREGNANCY WELLNESS IN HAWAII"

Alcohol and Drug Abuse Division, DOH

www.Hawaii.gov/health/substance-abuse

(808) 692-7506

Family Health Services Division, DOH

Fetal Alcohol Spectrum Disorder Coordinator

Family Planning Services

Perinatal Support Services

www.Hawaii.gov/health/family-child-health

Salvation Army

www.salvationarmyhawaii.org

Perinatal Addiction Treatment of Hawai'i (PATH)

www.pathclinic.org

Drug-Free Hawai'i

www.drugfreehawaii.org

"If you smoke please quit your baby will come healthier! I quit after 1 week I found out I was pregnant and I never went back. To have a healthy baby you must keep healthy."

"There is never enough emphasis on how smoking can affect your child. I feel that doctors should do more to help mothers/fathers quit smoking."

--Hawai'i PRAMS Participants

For More Information Contact:

Hawai'i PRAMS Coordinator
Hawai'i Department of Health
PRAMS@doh.Hawaii.gov
(808) 733-4060

Suggested Citation

Schempf A, Hayes D, Fuddy L. "Perinatal Substance Use Fact Sheet." Honolulu, HI: Hawai'i Department of Health, Family Health Services Division; December 2010.