# Substance Exposed Babies in Orange County



**County of Orange ● Health Care Agency**

# SUBSTANCE EXPOSED BABIES IN ORANGE COUNTY
## *2007 PREVALENCE STUDY*

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## Acknowledgements

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## Recommended Citation

*"Substance Exposed Babies in Orange County, 2007 Prevalence Study"* Orange County Health Care Agency, Orange County, California. January 2008.

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# EXECUTIVE SUMMARY

This report describes the findings from a two-phased multi-method assessment of prenatal substance use, the Substance Exposed Babies (SEB) Study. The purpose of the study was to assess the prevalence rate of babies exposed to alcohol, tobacco or other drugs (ATOD) prior to birth. Nearly 2,600 pregnant women participated in the anonymous assessment, which included urinalysis of women giving birth at participating hospitals and self-report assessments of women presenting at prenatal care providers. The study sample represented about 15% of the births that occurred county-wide during the study period. Results may help to inform program development including better prenatal education and screening in order to improve birth outcomes for babies born in Orange County.

*Key findings from the study include:*

- The prevalence rate of ATOD use at any time during pregnancy was **15.1%** and **8.9%** during the past month of pregnancy based on self-report surveys.

- Based on self-reported use, alcohol was the most common substance used **(12.9%)** during pregnancy, followed by tobacco **(4.9%).**

- Because drug users are less likely to self-report, the **3.5%** prevalence rate of illicit drug use at any time during pregnancy was based on positive urinalysis (2.4%) plus the 1.1% who tested negatively, but from medical chart review were known to have used drugs during pregnancy.

- The most common illicit drugs detected in urinalysis were opiates, amphetamines and marijuana.

- Reported alcohol and illicit drug use was highest during the 2nd trimester, whereas smoking rates were highest during the 1st trimester.

- The west and south regions of Orange County showed higher rates of self-reported alcohol and drug use during pregnancy than the central and north regions.

- Non-Hispanic white women and women with higher education were more likely to use ATOD during pregnancy than women of other ethnicities and women with less education.

- Compared with non-users, substance users were more likely to:

  - Have a family member with a substance use problem.

  - Have initiated prenatal care later or to have received no prenatal care.

  - Be exposed to second-hand smoke during pregnancy.

  - Have babies born with shorter gestational age and lower birth weight.

Compared with national prevalence rates, pregnant women in Orange County reported much lower prevalence rates for alcohol and tobacco use than pregnant women across the country. Conversely, rates of illicit drug use in Orange County were comparable to national rates (as determined by urinalysis/medical chart review).

Based on a substance use prevalence rate of 15.1% found in the present study, an estimated 6,800 babies are born each year in Orange County exposed to alcohol, tobacco, and/or illicit drugs prior to birth and are at risk for developmental, physical, behavioral, and social disabilities.

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## Background

Maternal use of substances such as alcohol, tobacco, and/or drugs (ATOD) during pregnancy increases a baby's risk for developmental, physical, behavioral, and social disabilities due to their deleterious effects on the developing fetus. Potential outcomes for the newborn include a lifetime of challenges requiring public support. Further, babies born to substance using women require a greater cost of care including longer hospital stays and greater utilization of intensive care units, compared to babies not exposed.[1]

The results of a 1992 state-wide study by Vega and colleagues found that 7.5% of Orange County women tested positive for substances at the time of labor and delivery.[2] Consequently, a variety of interventions to support the reduction of substance use by pregnant women were initiated. In 2004, the Orange County Grand Jury recommended that a new study be conducted to determine the current prevalence of substance use by pregnant women and ensure that appropriate strategies to reduce use are established.

The Orange County Health Care Agency, in collaboration with medical, health, and social service agencies throughout the county, conducted a two-phased multi-method assessment of prenatal substance use.

This report describes the findings from the investigation. Specifically, utilizing data from both biological markers (i.e., urinalysis) and self-report, this study assessed the prevalence rate of babies exposed to alcohol, tobacco or other drugs prior to birth. The findings may inform policy and program development and improve birth outcomes for babies in Orange County.

## Study Methods

There are a number of methodological issues associated with substance use prevalence studies. For example, research has established the validity of using biological markers to detect illicit drug use.[3] Importantly, urine toxicology screenings are time-limited tests, capturing only very recent drug use.[4] Urine tests generally only account for substances used in the last 12 to 96 hours, depending on: a) the type of substance, b) the amount used, and c) the frequency of use.[5] Self-report surveys, in contrast, are a generally accepted method for assessing frequency and prevalence of ATOD use,[6] and are able to capture ATOD use over a broader time period.[7] However, self-report surveys are likely to suffer from under-reporting due to factors such as social desirability or fear of retribution.[8,9]

Previous studies suggest that a multi-method assessment is necessary to accurately estimate substance use prevalence.[10,11,12] Therefore, the Orange County Health Care Agency (HCA) Research and Planning Unit conducted a two phased multi-method assessment of prenatal substance use, employing both biological (urinalysis) and a self-report method.

In the first phase, women presenting for birth at 10 birthing hospitals throughout the county were given urine toxicology screenings and "reported" substance use.[13] In the second phase, women visiting their prenatal care provider (e.g., obstetricians, community clinics) were asked to complete an anonymous questionnaire. Our samples were demographically similar to the broader population of women in Orange County (OC) who gave birth during the study period, suggesting our samples are representative. Methods for both phases are described briefly below. For a more detailed description of the methods and the results please refer to the original reports.[14,15]

## Phase 1 (Urine Toxicology and Medical Chart Review)

From April 2 through May 7, 2007, coded urine samples were collected from 1,470 pregnant women presenting for delivery at birthing hospitals throughout Orange County, California. Urine samples were then sent directly via courier to the University of California, Irvine Medical Center Toxicology Lab for testing.[16] Patient information (e.g., age, race, income, reported ATOD use, and birth outcome information) was collected by attending Labor and Delivery nurses and noted on an 18-item questionnaire (i.e., the Patient Data Collection Form: See Appendix A). These questionnaires were picked up two to four times per week by HCA study team members.

All data were collected confidentially and anonymously. Urine specimens and Patient Data Collection Forms did not contain personal identifiers. Instead, a machine and human readable code number linking the specimen with the Patient Data Collection Form was used. Only HCA Research and Planning investigators had access to individuals' anonymous demographic information, birth outcomes, and urinalysis drug test results.

This procedure was approved by the County of Orange HCA Human Subjects Review Committee and each hospital's own human subjects review committee (i.e., Institutional Review Board).

## Phase 2 (Self-Report Questionnaire)

Beginning May 1, 2007 and ending July 31, 2007, prenatal care providers throughout Orange County asked pregnant patients to complete a brief anonymous questionnaire on alcohol, tobacco and other drug (ATOD) use (See Appendix B for the survey instrument). The questionnaire asked patients about ATOD use: 1) the month prior to becoming pregnant, 2) at any time during pregnancy, and 3) during the past month of their pregnancy. Women who participated were between 2 and 40 weeks pregnant. A total of 1,125 (out of 5,243) surveys were returned from participating prenatal care providers, representing a 21% response rate.

## Data Analysis

Data collection instruments were cleaned, scanned and coded. Data analysis consisted of descriptive, bivariate and multivariate analysis. Descriptive statistics were generated to produce minimum value, maximum value, mean and standard deviations for variables of interest. Additional analyses were conducted using cross-tabulations, *t*-tests, and analysis

of variance to determine if differences existed between various groups. Significance of differences between groups was tested at the 95% confidence level (p < .05).

The prevalence rates described herein are reported for different time periods (e.g., before pregnancy, any time during pregnancy, past month of pregnancy, time of delivery), so we used results from both phases of the study. When prevalence rates for the same time period were available from both phases (e.g., any time during pregnancy), we report the highest rate.

## SECTION II:   DEMOGRAPHICS

*Age:*  A total of 2,595 women participated in the two phases of the study and ranged in age from 14 to 46 years (see Fig. 1). Age followed a normal distribution with a mean of 28 years (± 6.54). Among all women, 9.1% were adolescents under 20 years of age, 46% were between 20 and 29 years of age, and 44.9% were 30 years of age or older.

**Figure 1. Age Distribution of SEB Participants**
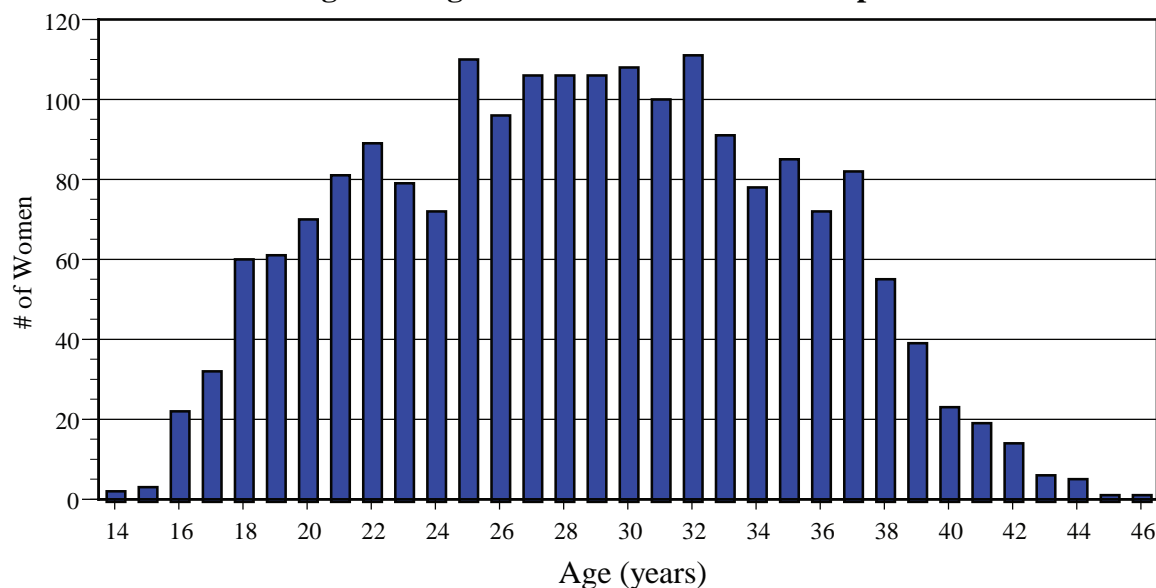


*Region of Residence:*  The distribution of the participants' region of residence closely matched that of the regional distribution of the nearly 14,000 resident births that occurred during the study period. As shown in Figure 2, 26% of SEB sample participants resided in the north region. The same proportion of county births were in the north region (26%). Thirty-one percent of the SEB sample was from central Orange County and 27% of county births were in the central region. Twenty-six percent of the sample was from the south region and 29% of county births were in the south region. The region with the lowest SEB sample proportion, the west region, also had the lowest proportion of county births (18%) during the study period.

**Figure 2. Regional Distribution of SEB Sample Births Compared to All County Births During Study Period**
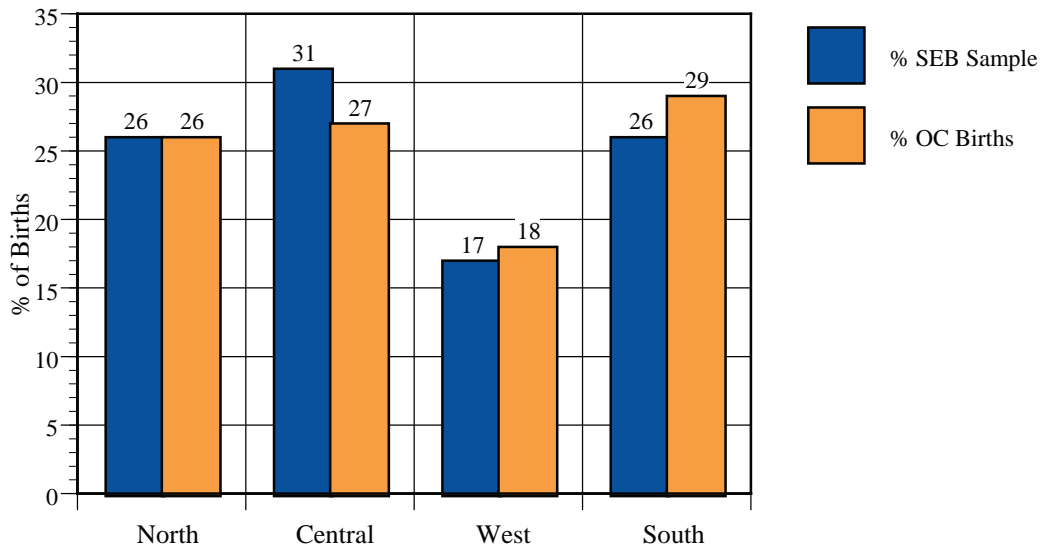


*Race/Ethnicity:* Figure 3 below presents the ethnic profile of the Substance Exposed Baby (SEB) study sample in comparison to county-wide births. Slightly more than half (56%) of the women sampled were Hispanic/Latina. White women accounted for 28% of the sample. Asian/Pacific Islander women accounted for approximately 12% of the sample. African-American/Black women accounted for 1% of the sample. The remaining 1% consisted of Native Americans and women categorized as other/unknown origin. When comparing the current study sample with all OC births during the study period, African-American women were sampled equally with their proportion of the birthing population. Asian/Pacific Islanders and Whites were slightly under-sampled, whereas Hispanic/Latina women were slightly over-sampled.

**Figure 3. Race/Ethnic Distribution of SEB Sample Births Compared to All County Births During Study Period**
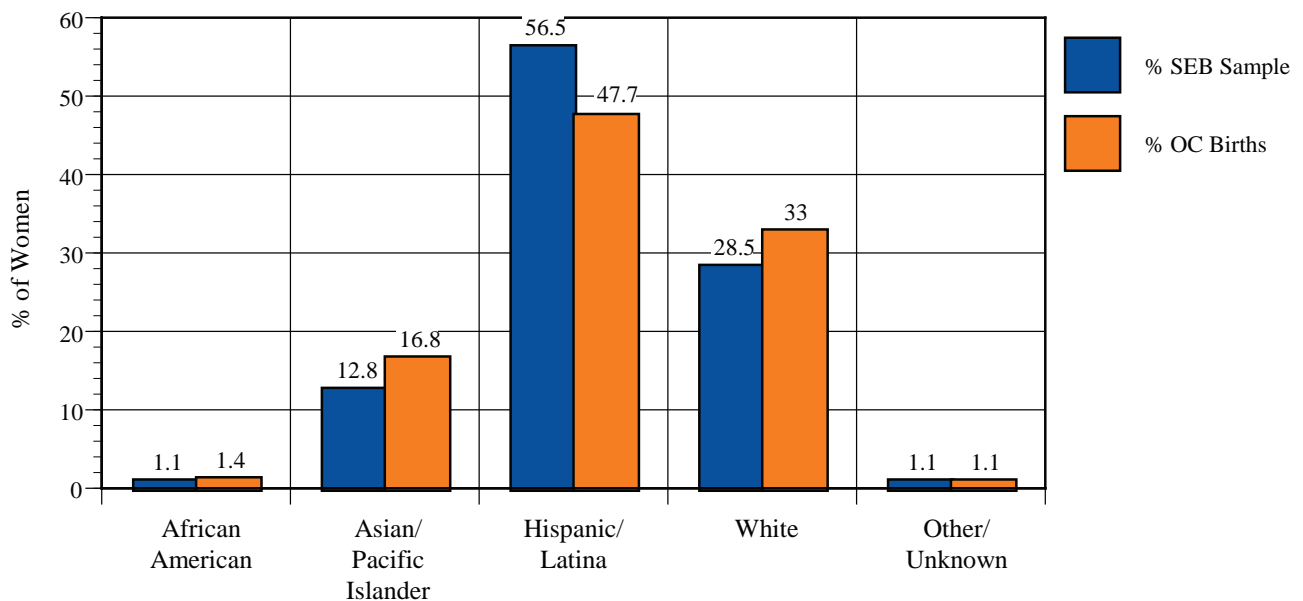
***Education:*** A third (32%) of the sample consisted of women who had not completed high school (Fig. 4). For those with a higher level of education, approximately 40% of the women sampled were *high school graduates;* and approximately 28% were *college graduates.* Compared to the population of women in the county who delivered during the study period, a slight over-sampling of women with a high school degree occurred as well as a slight under-sampling of women with a college education.

**Figure 4. Educational Level of SEB Sample Births Compared to All County Births During Study Period**
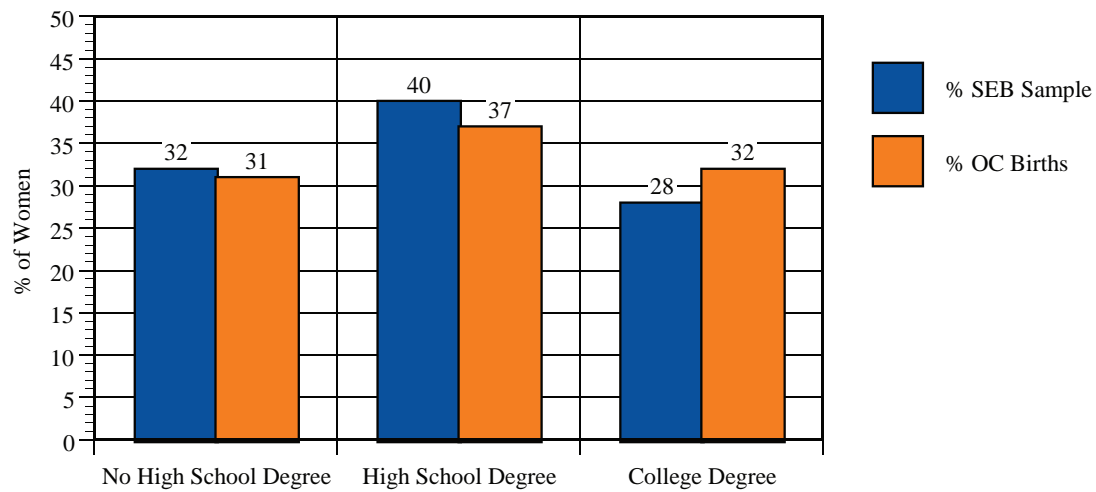
## SECTION III:    PREVALENCE OF SUBSTANCE USE DURING PREGNANCY
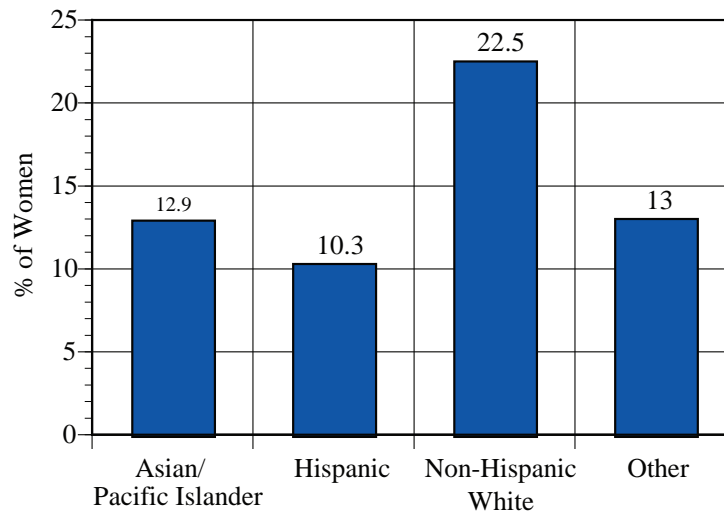
### All Substances

The prevalence of substance use (ATOD) before and during different prenatal periods is based on self-reported use.  As shown in Figure 5 below, the countywide prevalence rate of women who reportedly used at least one substance (alcohol, tobacco, or other drug) the month before pregnancy was 31.5%. When asked about substance use at any time during pregnancy, the number of women who reported using at least one substance decreased, by half, to 15.1%. Of those women, almost 1 in 10 (or 8.9%) indicated that they used a substance in the past month of pregnancy.

**Figure 5. Self-Reported Prevalence of Alcohol, Tobacco, and Other Drug Use (ATOD)**
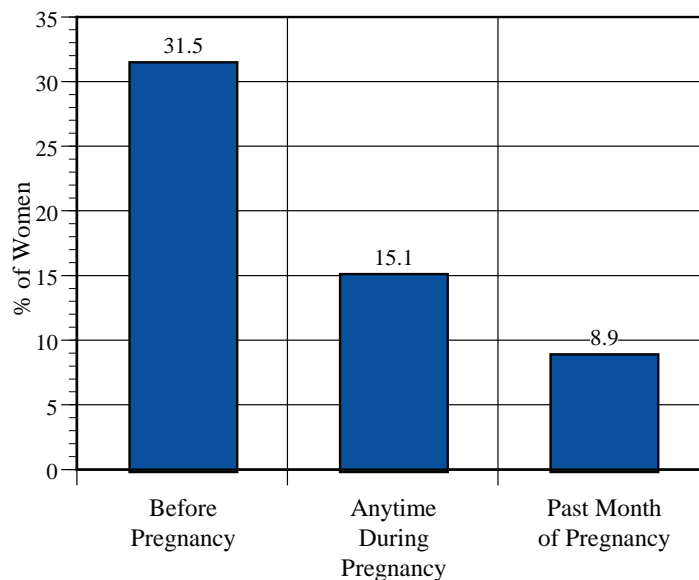


Self-reported ATOD use prevalence at any time during pregnancy within each racial/ethnic group is presented in Figure 6. Non-Hispanic White women were found to have the highest substance use prevalence rate; at 22.5%, they were significantly higher than all other groups. This rate was followed by women in the "Other" category (including African Americans), with 13% using at some time during their pregnancy.[17] Almost 13% of Asian/Pacific Islander women were found to have used substances. Hispanic women reported using substances less often than any other race/ethnic group, with 10.3% using substances at some time during pregnancy.

**Figure 6. Self-Reported ATOD Use Prevalence Anytime During Pregnancy by Race/Ethnicity**



Self-reported substance use varied somewhat by educational level (Fig. 7). Almost thirteen percent (12.9%) of women with no high school degree were substance users, while 14.8% of high school graduates and 16% of college graduates used substances during pregnancy.

**Figure 7. Self-Reported ATOD Use Prevalence Anytime During Pregnancy by Educational Level**
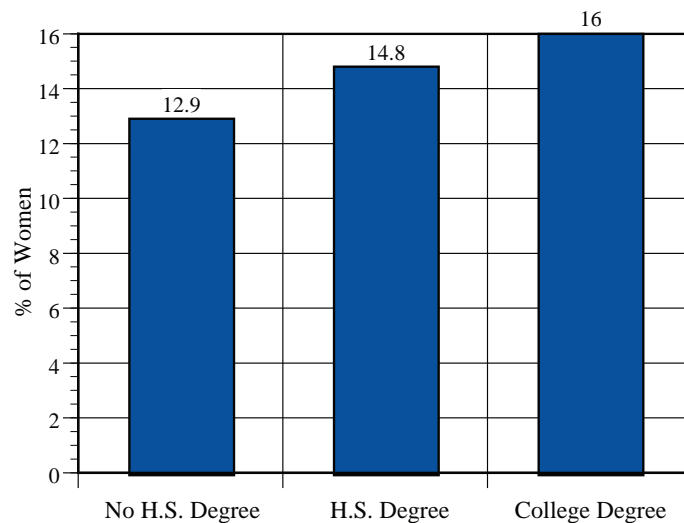


Substance use varied by age, with adolescent women (those 20 years and under) having the highest use at 22.6% (Fig. 8). Women between 20 and 29 years of age had a prevalence rate of 13.9%, while 15.4% of those 30 years and over used substances while pregnant. The average age of women who reported using substances during pregnancy was 30 years.

**Figure 8. Self-Reported ATOD Use Prevalence Anytime During Pregnancy by Age Group**
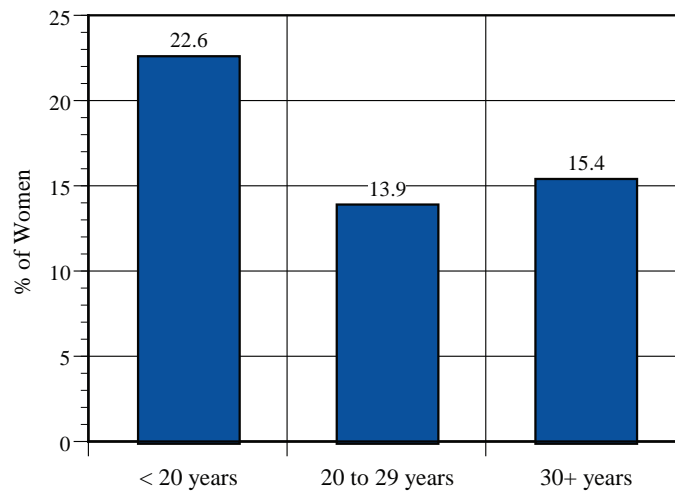


## Specific Substances

Previous research has found that women who drink alcohol are more inclined to stop use once pregnant, while women who use drugs before pregnancy are more likely to continue to use during pregnancy.[18] This was evident in the current study, which found a larger decline in alcohol and tobacco use than illicit drug use (comparing pre-pregnancy use to past month of pregnancy).

*Alcohol:* Drinking alcohol poses a number of potential risks to the fetus including fetal alcohol syndrome and fetal alcohol spectrum disorder.[19,20] As shown in Figure 9, the month before pregnancy, the percentage of women who reported consuming alcohol was 28.3%. This rate dropped to 12.9% when asked about alcohol consumption at any time during pregnancy, and to 7.3% during the past month of pregnancy. Overall, there was a large reduction (75%) in the use of alcohol between the month before pregnancy and the past month of pregnancy.

**Figure 9. Self-Reported Alcohol Use Prevalence**
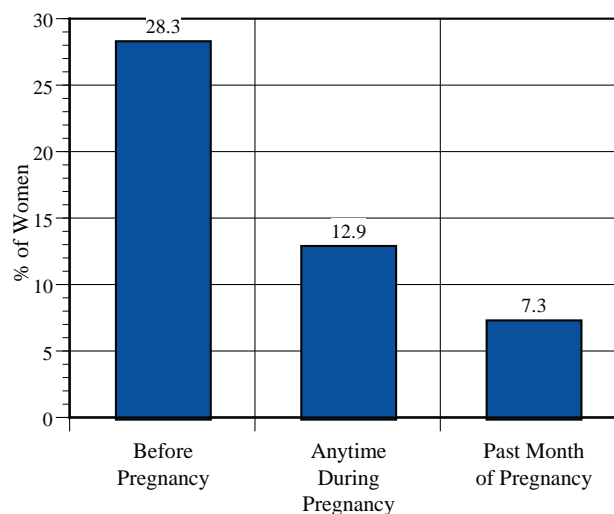
***Tobacco:*** Smoking poses a number of potential risks to the fetus. The most common is the effect smoking has on the size of the fetus.[21] This is important because the size of the fetus is directly related to increased infant morbidity and mortality, with smaller babies having a greater likelihood of complications and/or death. In addition, the risk of sudden infant death syndrome is five times greater for infants of women who smoke.[22]

In the present study, 7.8% of women reported smoking during the month prior to becoming pregnant (Fig. 10). This rate is consistent with previous reports that showed relatively low rates of smoking in Orange County.[23] In contrast, 4.9% of pregnant women reported smoking at some time during pregnancy. The rate of smoking was lowest during the last month of pregnancy, at 2.7%, representing a 65% reduction in reported smoking compared to the month before pregnancy.

**Figure 10. Self-Reported Tobacco Use Prevalence**
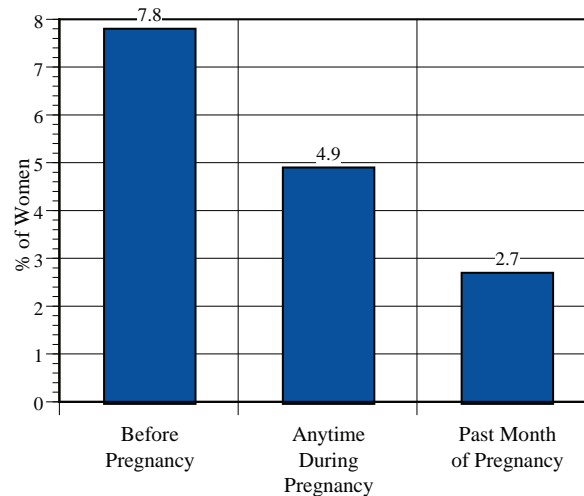


***Illicit Drugs:*** The use of illicit drugs during pregnancy is a well-known contributor to developmental, physical, behavioral, and social disabilities due to their deleterious effects on the developing fetus.[24,25,26] There have been numerous studies showing that individuals have a tendency to under-report their use of illicit substances.[27] This reluctance to disclose drug use may be due to perceived negative consequences.[28] Further, research has found that under-reporting is most problematic for recent/current drug use.[29] Such under-reporting would result in an artificial drop in the prevalence of illicit drug use when comparing recent (e.g., past month of pregnancy) to distant past use (e.g., early in pregnancy). Thus, results of the urinalysis portion from Phase 1 of the study were used to assess the prevalence of recent illicit drug use among pregnant women in Orange County.

Use of illicit drugs during the month before pregnancy was reported by 4.7% of women (Fig. 11). In contrast, 3.5% of women used illicit drugs at some time during pregnancy (based on 2.4% who had a positive urinalysis at delivery, plus 1.1% who tested negative at delivery, but were known to have used some time during pregnancy based on chart review).

While only about 1.1% of pregnant women self-reported using illicit drugs during the past month of pregnancy, urinalysis results showed that 2.4% tested positive for illicit drugs at the time of delivery. Therefore, the higher rate of 2.4% was used to estimate the most recent illicit drug use.

**Figure 11. Prevalence of Illicit Drug Use based on Self-Report and Urinalysis at Different Times During Pregnancy**
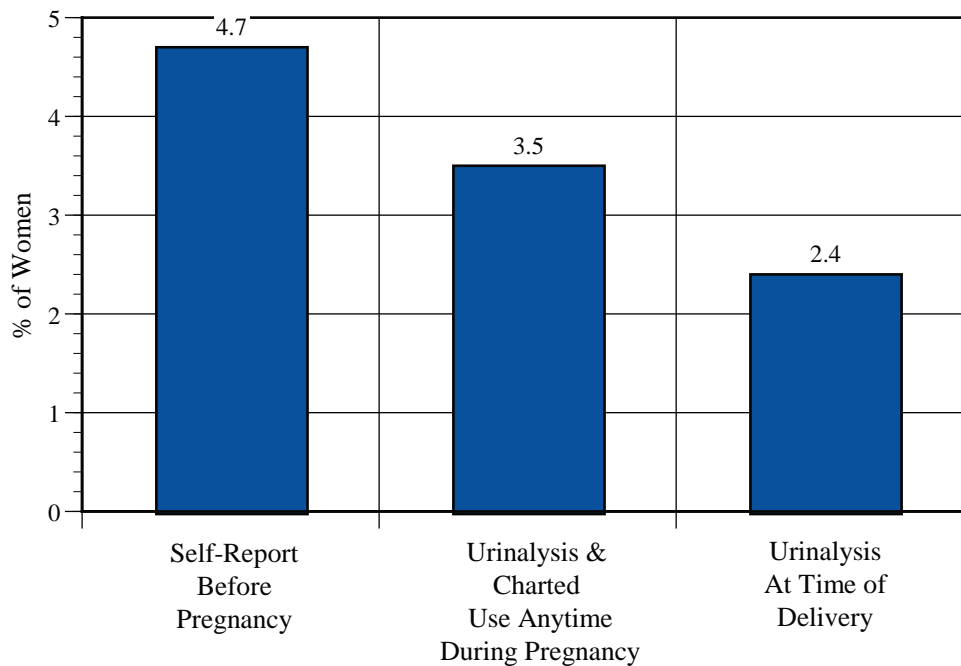


It is important to recognize that these results likely underestimate the actual number of babies who have been exposed to substances, especially illicit drugs, during pregnancy. In one study, researchers found that upwards of 75% of individuals who tested positive denied using drugs.[30] Similar results were found in the current urinalysis study where 83% of women who tested positive for illicit drugs denied using.

***Alcohol, Tobacco, and Illicit Drug Use by Trimester:*** Self-reported substance use across trimester of pregnancy was examined and summarized in Figure 12.[31] Women in their 2nd trimester were more likely to report drinking alcohol and using illicit drugs in the previous month than women in their 1st or 3rd trimesters. In contrast, more women reported smoking during their 1st trimester than during their 2nd or 3rd trimesters.

**Figure 12. Self-Reported ATOD Use Prevalence by Trimester of Pregnancy**
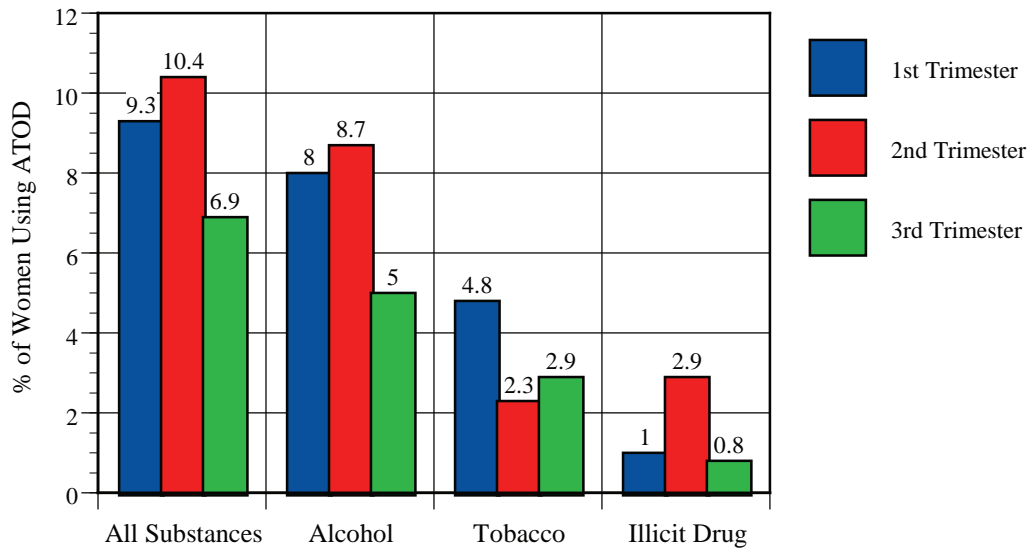


***Comparison to National Study:*** The most recent national survey by the Substance Abuse Mental Health Services Administration (SAMHSA 2005-06, Fig. 13) showed higher self-reported prevalence rates for ATOD use, especially for tobacco, among pregnant US women compared to our results for Orange County.[32] Note that because the national study was based on self-reported use, we use only the self-reported rate of illicit drug use (1.1%) from Phase 2 of the present study for this comparison.

**Figure 13. Comparison of SEB Sample Self-Reported Past Month ATOD Use Prevalence to National Study**
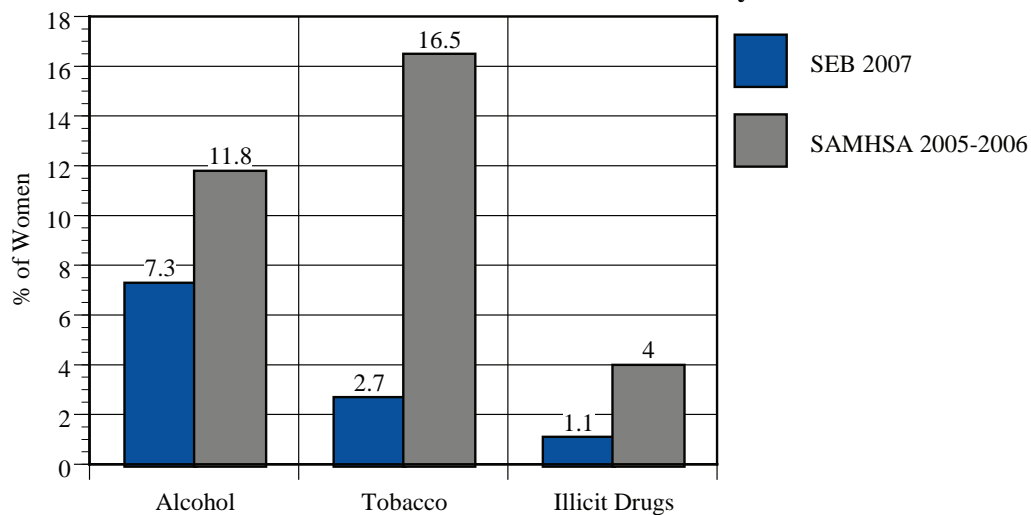
***Comparison to Previous Statewide Study:*** In Figure 14 below, the current rates of illicit drugs detected in urinalysis at labor and delivery in Orange County are compared to the results from a California-wide study that was conducted by Vega and colleagues.[33] As shown, use of certain substances changed markedly over the past 15 years.[34] For example, a notable increase in the prevalence of amphetamine use in Orange County has occurred since the 1992 study. Marijuana and opiates were less prevalent in the present study compared to county rates in 1992. Cocaine use was not detected in the present study.

**Figure 14. Comparison of SEB Sample Illicit Drug Use Prevalence to 1992 Statewide Study**
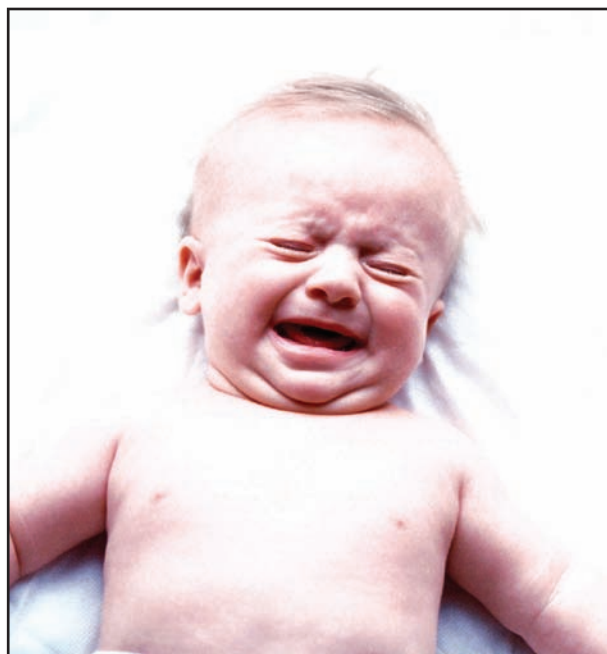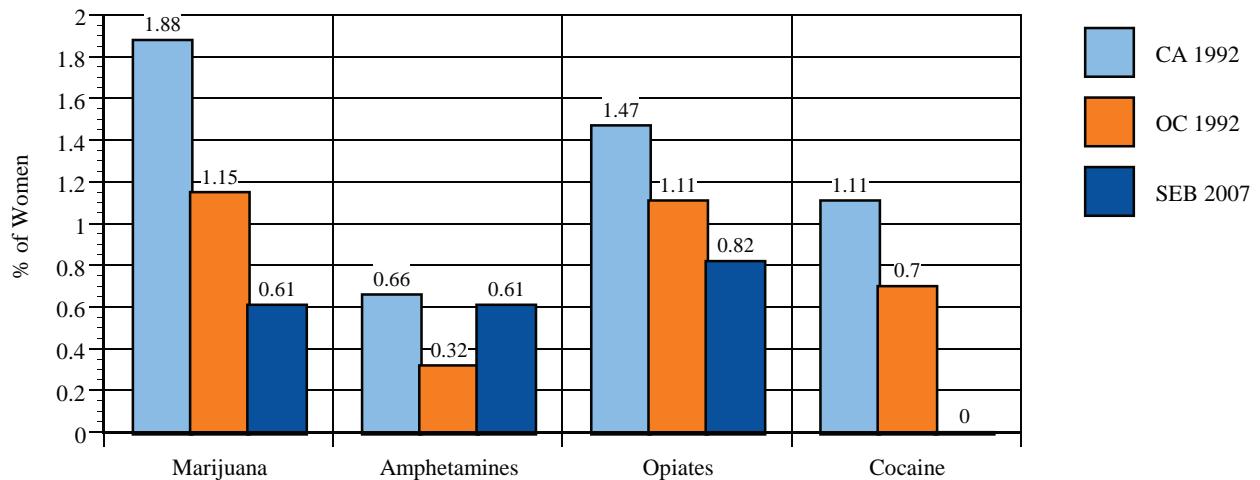
## SECTION IV: REGIONAL USE RATES

*All Substances:* The map and table below (Fig. 15 and Table 1) demonstrate the regional distribution of self-reported ATOD use at any time during pregnancy, based on the women's ZIP code of residence. The western and southern regions of the county had the highest rates, 16.9% and 16.6% respectively. The central region had a rate of 14.5% for all substances. The northern region reported the lowest rate of any substance use during pregnancy at 12.1%. The central and northern regions were both lower than the county-wide rate of 15.1%.

**Figure 15. Regional Distribution of ATOD Use Prevalence by Region**
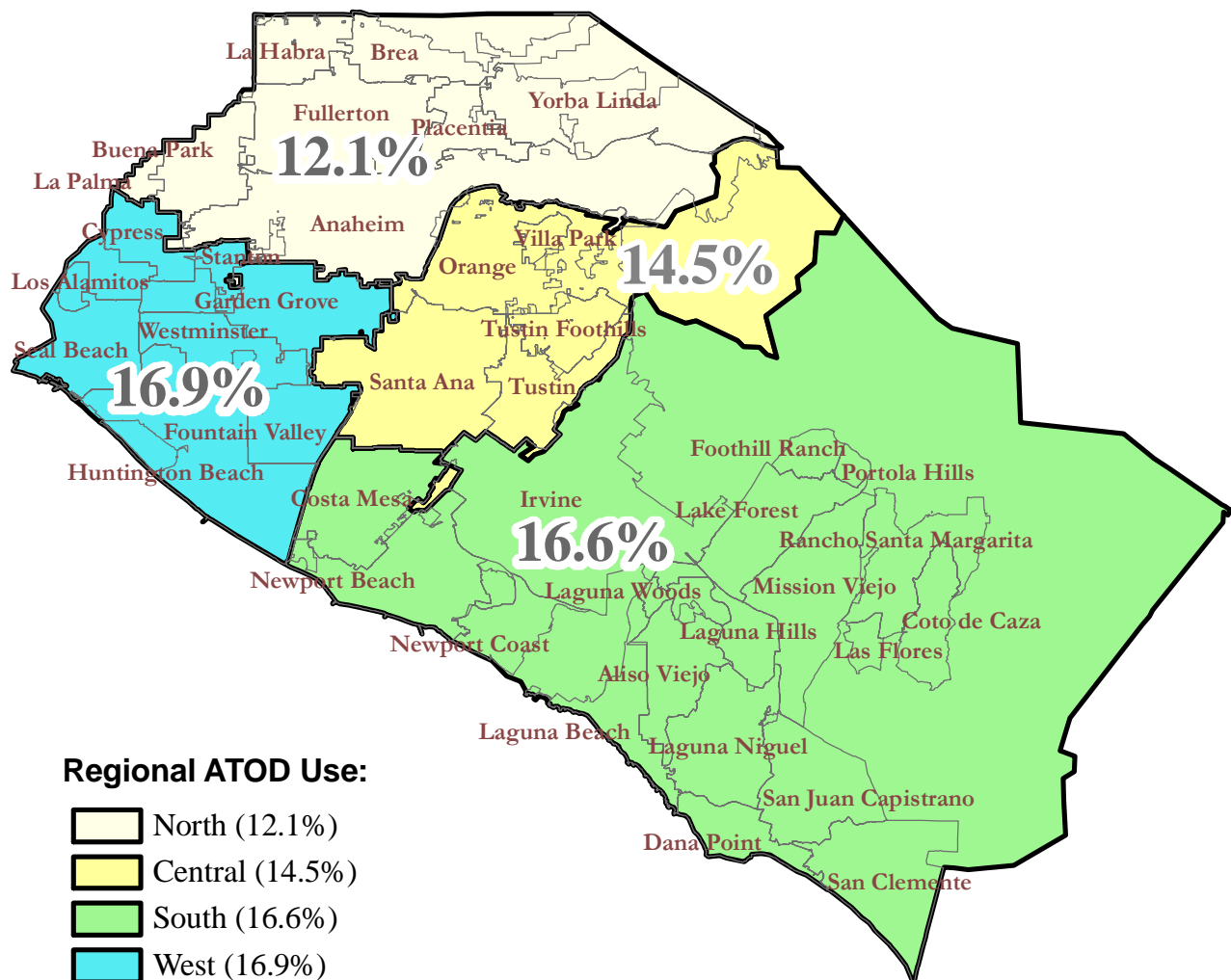


*Alcohol:* When comparing the self-reported use of alcohol any time during pregnancy among Orange County regions, the region with the highest rate of alcohol consumption among pregnant women was the southern region (14.5%), followed by the western region (13.7%). Alcohol use was notably lower in the central (12.6%) and northern (9.9%) regions. The county-wide prevalence rate was 12.9%.

***Tobacco:*** There was less variation in the self-reported use of tobacco across the county compared to that of alcohol. Tobacco use was highest in the western region, at 6.0%, which was higher than the County average of 4.9%. The northern (5.0%) and southern (4.6%) regions were similar to the county average (4.9%). The central region had tobacco use rates that were slightly lower than the county average, at 4.3%.

***Illicit Drugs:*** Both the western (4.4%) and southern (3.7%) regions had higher rates of illicit drug use at any time during pregnancy than the overall county rate of 3.5%. The central and northern regions were below the county average, with 3.1% and 2.4% of women, respectively, using illicit drugs at any time during pregnancy.*

**Table 1.  Regional Distribution of Alcohol, Tobacco, and Other Drug Use Prevalence**

| Percentage of Women Using Any Substance (Alcohol, Tobacco, and/or Other Drugs) During Pregnancy | | | | |
|---|---|---|---|---|
| | **Substance Type*** | | | |
| **Region** | *All Substances* | *Alcohol* | *Tobacco* | *Illicit Drugs* |
| Central | 14.5% | 12.5% | 4.3% | 3.1% |
| North | 12.1% | 9.9% | 5.0% | 2.4% |
| South | 16.6% | 14.5% | 4.6% | 3.7% |
| West | 16.9% | 13.8% | 6.0% | 4.4 % |
| County-Wide | 15.1% | 12.9% | 4.9% | 3.5% |

*All prevalence rates are based on self-reported use from Phase 2 except for illicit drug use prevalence which was based on results from Phase 1 urinalysis/charted use.*
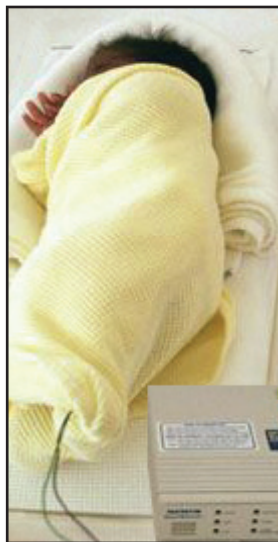
# SECTION V: SUBSTANCE USERS VS. NON-USERS

Substance users and non-users were compared in terms of a variety of risk factors before and during pregnancy, as well as with regard to their babies' birth outcomes. From the Self-Report Questionnaire in Phase 2 of the study, 1,125 respondents were asked whether they had a family member with a substance use problem, and whether they had been exposed to second-hand smoke during pregnancy. The profiles of substance-users and non-users are compared below.

*Family Member with Substance Use Problem:* 1 in 5 women who used ATOD during pregnancy reported a family member with a drug and/or alcohol problem (Fig. 16). By comparison, only 1 in 14 non-ATOD users reported a family member with a drug and/or alcohol problem.

**Figure 16. Family History of Substance Use: Substance Users Compared to Non-Users**
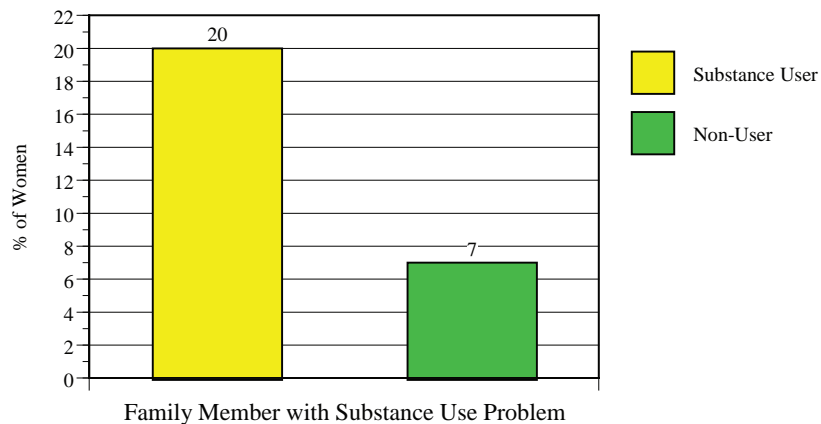


*Exposure to Second-Hand Smoke During Pregnancy:* Nearly 1 in 4 substance-using women (23%) were exposed to second-hand smoke during pregnancy, compared with 4% of non-using women (Fig. 17).

**Figure 17. Second-Hand Smoke Exposure: Substance Users Compared to Non-Users**
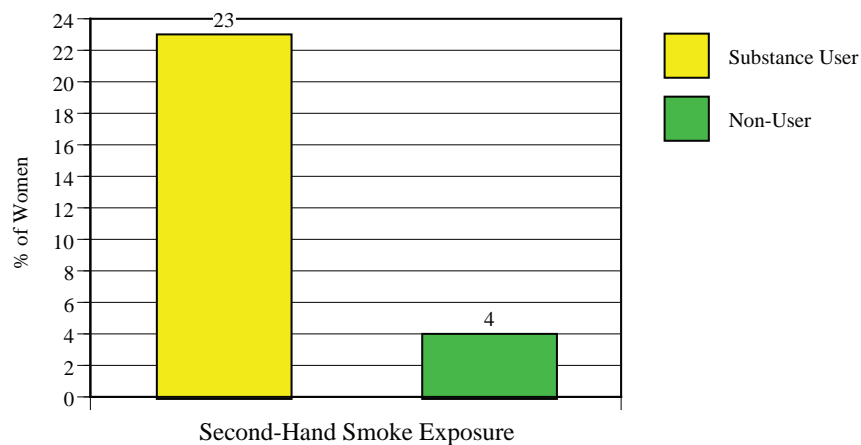
The Phase 1 Urine Toxicology and Medical Chart Review, conducted in collaboration with the birthing hospitals, revealed important information about prenatal care and birth outcomes for 1,470 participants. Patterns of prenatal care and birth outcomes are compared below for substance users and non-users.

***Prenatal Care:*** Prenatal care is a factor predictive of healthy pregnancies and babies. Compared with non-users, substance users were more likely to receive prenatal care later or not at all. For example, almost 10% of women who used substances during pregnancy had no prenatal care, in comparison to only 0.5% of non-substance using women (Fig. 18). Similarly, only 60% of substance-using women received prenatal care in the first trimester, compared to 82% of non-substance-using women.

**Figure 18. Prenatal Care Initiation: Substance Users Compared to Non-Users**
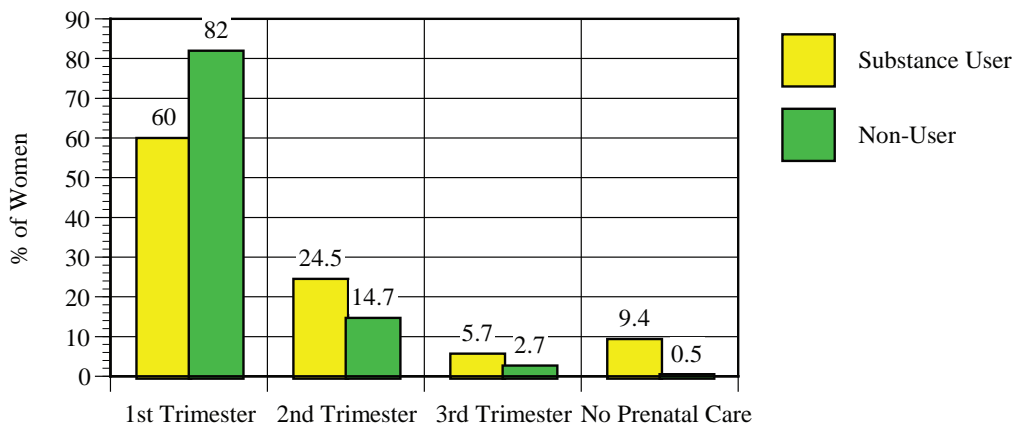


***Gestational Age:*** The mean gestational age of babies born to substance-using women was 2.5 weeks shorter than for non-users (35.8 weeks vs. 38.3 weeks). With respect to premature births, about 4 in 10 substance-using women (40%) had a premature baby (defined as 36 weeks or less in gestational age). In sharp contrast, less than 1 in 10 non-substance using women (7.6%) had a premature baby.

***Birth Weight:*** Substance-using women delivered more very low or low birth weight babies (23.9%) than non-using women (4.6%, Fig. 19). Almost all non-using women (95.4%) had babies with healthy birth weights compared to 76.1% of substance-using women.

**Figure 19. Birth Weight of Babies Born to Substance Users Compared to Non-Users**
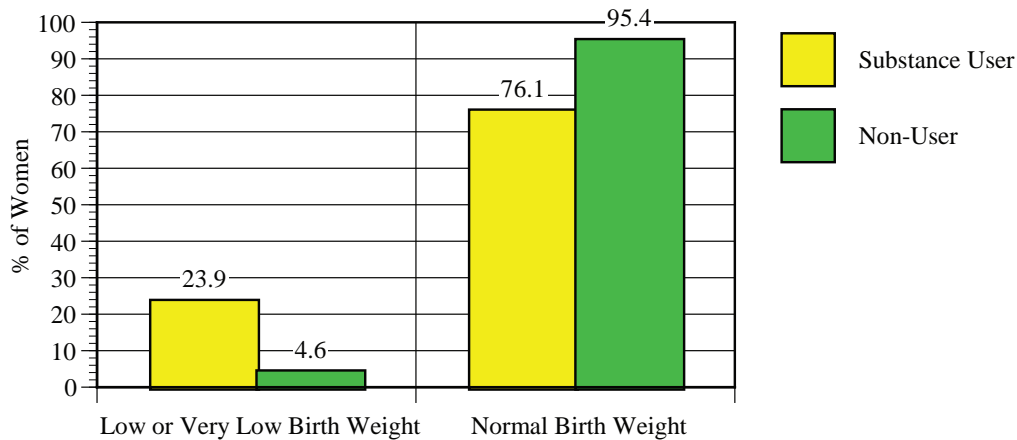


SECTION VI:  CONCLUSIONS

In the present study, 15.1% of pregnant women in Orange County reportedly used alcohol, tobacco, and/or other drugs while pregnant. Based on the prevalence rate of 15.1% for substance use at any time during pregnancy, it is estimated that about 6,800 babies annually are exposed to the deleterious effects of alcohol, tobacco and/or illicit drugs (Table 2). Alcohol was the most commonly used substance (12.9%), exposing an estimated 5,800 babies, followed by 2,200 babies whose mother smoked while pregnant (based on a 4.9% prevalence rate). Approximately 1,600 babies in Orange County are exposed in utero each year to illicit drugs based on the prevalence rate of 3.5%.*

**Table 2. Substance Exposed Babies Estimates**

| Substance Type | Use at Any Time During Pregnancy | |
|---|---|---|
| | Prevalence Rate* | Minimal # of Estimated Babies |
| All | 15.1% | 6,800 |
| Alcohol | 12.9% | 5,800 |
| Tobacco | 4.9% | 2,200 |
| Illicit Drugs | 3.5% | 1,600 |

*All prevalence rates are based on self-reported use from Phase 2 except for illicit drug use prevalence, which was based on results from Phase 1 urinalysis/reported use.*

These figures are likely to be under-estimates, given that nearly 10% of pregnant women who use substances do not seek prenatal care, and therefore would not have been captured by the self-report survey, along with the fact that pregnant women may under-report their substance use.

These results may help to inform program development, including better prenatal education targeting substance using pregnant women and enhanced screening in order to improve birth outcomes for babies born in Orange County.

## SECTION VII:  REFERENCES

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[11] Cook *Ibid.*

[12] Lester *Ibid.*

[13] "Reported" substance use in Phase 1 of the study was based on self-reports by women as well as chart reviews.

[14] *Substance Exposed Babies in Orange County, 2007 Hospital Prevalence Study.* County of Orange Health Care Agency, Office of Quality Management, Planning & Research. Santa Ana, CA.

[15] *Substance Exposed Babies in Orange County, 2007 Self-Report Prevalence Study.* County of Orange Health Care Agency, Office of Quality Management, Planning & Research. Santa Ana, CA.

[16] Urine samples were tested using a drug and alcohol panel for the following: THC (marijuana), nicotine, cocaine, amphetamines/methamphetamines, barbiturates (e.g., Phenobarbital and Seconal; depressants), benzodiazepines (e.g., Valium and Xanax; minor tranquilizers), MDMA (Ecstasy), opiates (e.g., heroin and morphine), phencyclidine (PCP), propoxyphene (e.g., Darvon; narcotic analgesic), and alcohol. Samples that were positive on initial immunoassay screen were confirmed using gas chromatography/mass spectrometry (GC/MS) procedures to confirm the identity of drug metabolites and actual concentration. The sample results were linked only to the study number and reported directly to the study monitor.

[17] Estimate may be unreliable due to the small sample size.

[18] Clark *Ibid.*

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[See also: Fetal Alcohol Spectrum Disorders. Centers for Disease Control and Prevention, Department of Health and Human Services. *www.cdc.gov/ncbddd/fas/default.htm*]

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[31] In Phase 1 of the study, all participants were at labor and delivery and thus, all women were in their 3rd trimester. For the Self-Report Survey of Phase 2, 28% of women were in their 1st trimester (1-13 weeks), 29% were in their 2nd trimester (14-27 weeks), and 43% were in their 3rd trimester (28-40 weeks), thereby providing a good cross-section of women across pregnancy.

[32] The 2005-06 SAMHSA study surveyed women face-to-face and is considered comparable to "self-report" in the current study.

[33] Vega *Ibid.*

[34] Note that the prevalence of specific drugs is influenced by the fact that different substances remain detectable in the urine for different periods of time. Based on UA results only, alcohol and tobacco use rates in OC were lower in 2007 than in the 1992 study, whereas overall illicit drug use rates did not change. Please see 2007 Hospital Prevalence Study (citation #14) for a more detailed comparison.

# Appendix A: SEB UA Hospital Data Collection Instrument

## ORANGE COUNTY
### Substance Exposed Baby Study

**Dear Labor & Delivery Nurse,**

We are trying to get an idea of how many expectant mothers in Orange County have used alcohol, tobacco, or other drugs during pregnancy. Please help us by completing this brief, confidential and anonymous questionaire.
- **Peel off the ID labels** from this form and place on the mother's urine specimen container & lab test form.
- Seal this form in the envelope provided so that it can be mailed to the address below. Thank you.

Directions: Please use blue or black pen ● or X or 3 7

**1. Pregnancy history**
- Term births: (≥37 weeks) ☐
- Preterm births: (< 37 weeks) ☐
- Abortions (TAB or SAB): ☐
- Live children: ☐

**2. What is the gestational age of this baby?** ☐ weeks

**3. Is this a multiple birth?** ☐ Yes ☐ No

**4. In what trimester did prenatal care begin?**
- ☐ 1st
- ☐ 2nd
- ☐ 3rd
- ☐ No prenatal care
- ☐ Don't know

**5. What is the baby's birth weight? If this is a multiple birth, please report on the smallest infant.**
- ☐ Very low birth weight (less than 1,500 g)
- ☐ Low birth weight (less than 2,500 g)
- ☐ Normal (greater than 2,500 g)

**6. What drugs/medications were given to the mother before the urine sample was collected?**
- ☐ None
- ☐ Demerol
- ☐ Morphine
- ☐ Phenergan
- ☐ Sublimase (Fentanyl)
- ☐ Nubain
- ☐ Other: _____

**7. Preadmission prescription medications:** ☐ Yes ☐ No
  Please specify: _____

**8. What is the mother's race/ethnicity?**
- ☐ White/Caucasian
- ☐ African-American/Black
- ☐ Amer. Indian/Alaskan Native
- ☐ Hispanic/Latina
- ☐ Asian
- ☐ Pacific Islander
- ☐ Other  Please specify: _____

**9. What is the highest educational level of the mother?**
- ☐ No High School
- ☐ Some High School
- ☐ High School Graduate
- ☐ Some College
- ☐ College Graduate
- ☐ Post Graduate

**10. What Zip Code does the mother live in?** ☐☐☐☐☐

**11. What is the source of payment for delivery?**
- ☐ HMO/Private insurance
- ☐ Medi-Cal/Healthy Families
- ☐ Other government program
- ☐ No known insurance
- ☐ Self-pay
- ☐ Other

**12. Did the mother smoke cigarettes during pregnancy?**
☐ Yes ☐ No/Denied ☐ Don't know

**13. Did the mother drink alcohol during pregnancy?**
☐ Yes ☐ No/Denied ☐ Don't know

**14. Did the mother use illicit drugs during pregnancy?**
☐ Yes ☐ No/Denied ☐ Don't know

**15. What is the birth mother's age?**
- ☐ Under 20 years
- ☐ 20 to 29 years
- ☐ 30 to 35 years
- ☐ 36 years or older

**16. Age in years:** ☐☐

**17. Non-medical people in the labor and delivery room:**
- ☐ Spouse/Partner
- ☐ Mother
- ☐ Friend
- ☐ Doula
- ☐ Other  Please specify (e.g., sister): _____

**18. Ask Patient (Optional)** - "In the past year, how would you rate the amount of stress in your life at home or work from 1 for "no stress" to 6 for "extreme stress?"" ☐

**OC Health Care Agency**
**Research Center**
405 W. 5th St., Suite 458
Santa Ana, CA 92701

*Questions? Contact Dr. Curtis Condon at (714) 834-2034.*

M-106230-OCHC-L   M12  0807 5 4 3 2 1

*Place this label on specimen*    *Place this label on test form*

Participant ID # Label     Participant ID # Label

Participant ID #

7 277109 007251

# Appendix B:  SEB Self-Report Survey Instrument

# *Prenatal Alcohol, Tobacco, and Other Drug Survey*

*Dear Expectant Mom:  We need your input!  Please help us identify how many pregnant women use alcohol, tobacco, or other drugs while they are pregnant. Your honesty will help us provide services to women and children in Orange County. <u>Your answers are anonymous and confidential.</u> They will not be shared with your doctor or anyone else. This survey is voluntary and not part of your medical care. Please do not write your name on this form. Thank you for helping us serve you better!*

DIRECTIONS: Please use a blue or black pen to mark the boxes.  ☒ ●

At any time during this pregnancy, have you tried or used...

Cigarettes? ☐ Yes ☐ No     Alcohol? ☐ Yes ☐ No     Drugs? ☐ Yes ☐ No

*Have you used these drugs in the month before you became pregnant or during the past month of this pregnancy?*

| Please check Yes or No in each column | Month before pregnancy | | During the past month | |
|---|---|---|---|---|
| Marijuana (pot, bud, grass, weed) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Heroin (smack, horse, brown, tar) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Methadone | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Cocaine (crack, rock, coke, powder) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Barbiturates (downers, reds, phenobarb, Seconal) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Amphetamines (meth, uppers, crystal, crank, speed) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Any other drugs (inhalant, Ecstacy, X, acid, PCP, LSD, etc.) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Non-medical use of prescription medication (pain relievers, tranquilizers, stimulants, or sedatives) <br> If yes, what? _____ | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| Any alcohol (wine, beer, liquor?) | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| If yes, the usual number of drinks per month: | ☐ ☐ | | ☐ ☐ | |
| Smoke cigarettes? | ☐ Yes | ☐ No | ☐ Yes | ☐ No |
| If yes, the usual number of cigarettes per day: | ☐ ☐ | | ☐ ☐ | |
| Does anyone else smoke in a house or car when you are there? | ☐ Yes | ☐ No | ☐ Yes | ☐ No |

What is your age? ☐ ☐ years          What ZIP code do you live in? ☐ ☐ ☐ ☐ ☐

What is your race/ethnicity?
☐ White/Caucasian     ☐ Asian     ☐ Pacific Islander
☐ Hispanic/Latina     ☐ African-American/Black
☐ American Indian/Alaskan Native     ☐ Other     Please specify: _____

How do you pay for your prenatal care?
☐ HMO/Private insurance
☐ Self pay/cash
☐ Medi-Cal/Healthy Families
☐ Other government program

**How many weeks pregnant are you now?** ☐

What is your annual household income?
☐ Less than $25,000
☐ $25,000 to $50,000
☐ $50,001 to $75,000
☐ $75,001 to $100,000
☐ $100,001 to $125,000
☐ More than $125,0000

Does anyone in your family have a drug/alcohol problem?
☐ Yes, my parent
☐ Yes, my husband/partner
☐ Yes, my brother/sister
☐ Yes, other
☐ No

What is the highest level of education you completed?
☐ No High School     ☐ High School Graduate     ☐ College Graduate
☐ Some High School     ☐ Some College     ☐ Post Graduate

Check here if you remember doing this survey at a previous visit: ☐

Thank you. Please seal this survey in the pre-paid envelope and put it in the US mail.

Serial Code

2 432272 378040     E