



Perinatal Substance Abuse Nevada Birth Outcomes Monitoring System 2007-2009

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Office of Public Health Informatics and Epidemiology
Nevada State Health Division
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Acknowledgements

2007-2009 Nevada Birth Outcomes Monitoring System

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Purpose

2007-2009 Nevada Birth Outcomes Monitoring System

This report reviews the Nevada Birth Outcomes Monitoring System (NBOMS) data and compares the findings with final data from the Electronic Birth Registry System (EBRS) for the years 2007 – 2009 to examine the issue of perinatal substance abuse in Nevada for this study period.

NBOMS collects data on perinatal substance abuse in addition to physical birth defects. Nevada Revised Statute [442.320](#) mandates a statewide system for the collection and analysis of information concerning birth defects and other adverse birth outcomes. This report details NBOMS perinatal substance abuse data for 2007 to 2009.

The three year reporting period between 2007 and 2009 was selected for perinatal substance abuse review due to these years being the only final NBOMS data available.

Perinatal substance abuse is a female's use during pregnancy of illicit or legal drugs, tobacco, or alcohol, or any combination of these substances.

This report will be useful to healthcare professionals and expectant mothers interested in the effects of perinatal substance abuse.

Summary

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Nationally, nearly 4 percent of pregnant women use illegal drugs. Pregnant women who use illicit drugs may also engage in the unhealthy behaviors of sexually transmitted infections, poor nutrition, alcohol, and tobacco use. It often is difficult to determine which health problems are caused by a specific illicit drug.¹ All of these behaviors or substances may pose risks. The hazards include learning and behavioral issues, birth defects, being born too soon or too small, or withdrawal symptoms.

Alcohol, Ecstasy and other amphetamines, heroin, cocaine and other inhalants like glue and marijuana, tobacco, all may place pregnancies at risk. Many of these substances are illegally obtained and may contain impurities which are hazardous to both the mother and their unborn infant.

Birth defects and other problems caused by alcohol and illicit drugs are completely preventable.²

The March of Dimes advises women who use illicit drugs or alcohol to stop before they become pregnant or to delay pregnancy until they believe they can avoid the substance completely throughout pregnancy.⁶

Nevada Highlights:

- *Narcotics was the category of substance most frequently used during pregnancy (34.2%), followed by hallucinogenic agents (21.7%) and cocaine (21.3%).*
- *Average APGAR scores for substance abused infants did not differ from statewide and national values.*
- *NBOMS data suggests that only 82.4 percent of substance abused infants attain a gestational age of 36 weeks compared to the statewide value of 92.3 percent.*
- *According to NBOMS data, the majority of mothers with prenatal substance abuse were ages 20 to 34.*
- *26.1 percent of substance abused infants had low to extremely low birth weights compared to the statewide proportion of 8.4 percent.*

Introduction

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Birth Data

Perinatal substance abuse data is self reported on the *Mother's Worksheet for Child's Birth Certificate* questionnaire completed at the time of the creation of a birth certificate. This questionnaire requests supplementary information concerning tobacco, alcohol, and drug use, such as the number of cigarettes per day for each trimester, the number of alcoholic drinks per week, and the type of drugs used (prescription, over the counter, or other). Final data from the EBRIS for the years 2007 – 2009 was available for and included in this report.

NBOMS Data

Since 2005, Nevada has had a system in place to collect birth defect data. Trained program staff regularly visit birthing facilities to review records and abstract data. Birth defects are defined as any structural or chemical abnormality present in a child at birth. Qualifying conditions included in NBOMS are defined by the National Birth Defect Prevention Network (NBDPN) and, with the exception of newborns affected by maternal alcohol use, prenatal substance abuse is not included in NBOMS. In 2007, the Nevada State Health Division added substance abuse, as defined by the International Classification of Diseases – Clinical Modification Codes (ICD-9-CM) codebook, to the list of physical conditions supplied by NBDPN and began abstracting perinatal substance abuse data. Caution should be used when interpreting the results of this report's NBOMS analysis because there is no standard policy in place among birthing facilities for testing newborns for perinatal substance abuse; therefore, the authors of this report suggest that its findings represent only a sample, as opposed to a census, of all perinatal substance abuse cases in Nevada between 2007 and 2009.

Technical Notes

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This report is based on NBOMS, which contains 591 reported perinatal substance abuse cases between 2007-2009 and birth data from EBRS for 2007 through 2009, which contains 119,444 births with 50,940 cases of perinatal substance abuse reported.

Frequencies of ICD-9 codes which were determined by positive NBOMS variable record count and percentages calculated versus total reported EBRS births.

The following ICD-9 codes were utilized in the creation of this report:

<u>Substance</u>	<u>ICD-9 Code</u>
Alcohol	760.71
Cocaine	760.75
Hallucinogenic Agents	760.73
Narcotics	760.72
Other Substances	760.79
Unspecified Noxious Substances	760.70

Perinatal Substance Abuse

2007-2009 Nevada Birth Outcomes Monitoring System

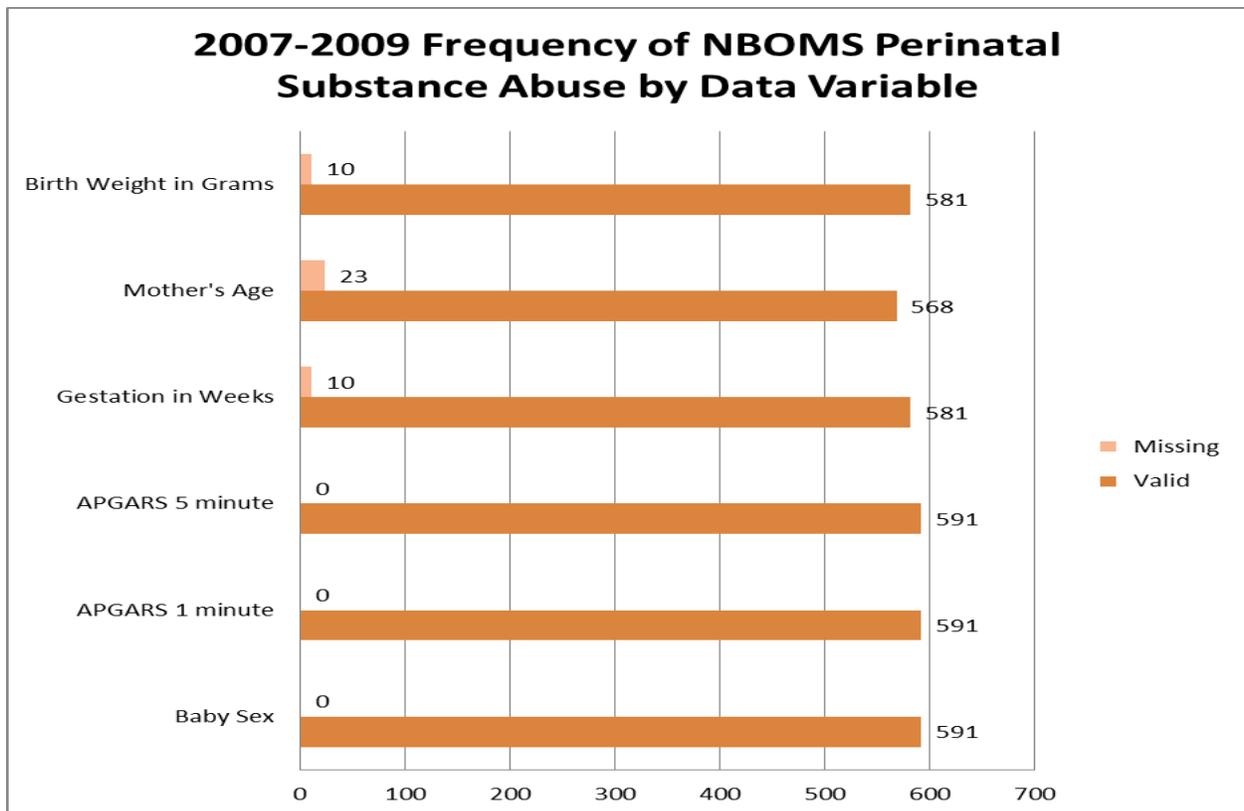
The Data

A breakout of the frequencies of the available NBOMS data variables: birth weight in grams, mother's age, gestation in weeks, appearance, pulse, grimace, activity, and respiration (APGAR) one and five minute scores, and baby sex, may be seen in Figure 1.

Infant sex and both of the APGAR scores are consistently reported, 100 percent of the time, 591 records of 591 records, in the NBOMS data collection. Infant gestation age in weeks and birth weight are reported 98 percent of the time at 581 records out of 591 available records. Mother's age is collected at a rate of 96 percent, 568 records out of 591 available NBOMS data records.

A breakout of other variables, such as race-ethnicity, is not possible with the NBOMS data due to the small sample size, uncontrolled collection of the data sample, and variance in the make-up of regional populations within the state.

Figure 1



Category of Substances

The category of substance most abused by pregnant mothers is Narcotics (34.2%), followed by hallucinogenic agents (21.7%), cocaine (21.3%), other substances (16.2%), alcohol (3.6%), and unspecified substances (3.0%). Mothers who abuse multiple substances were counted separately for each substance category (Figure 2 and Table 1).

Figure 2

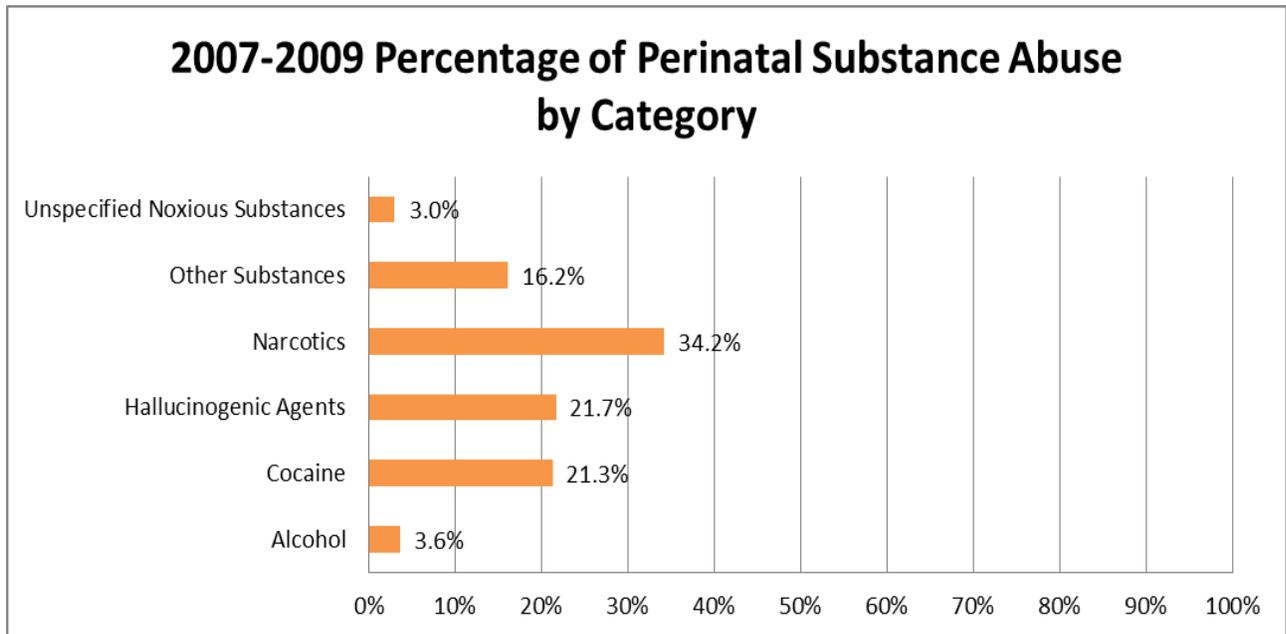


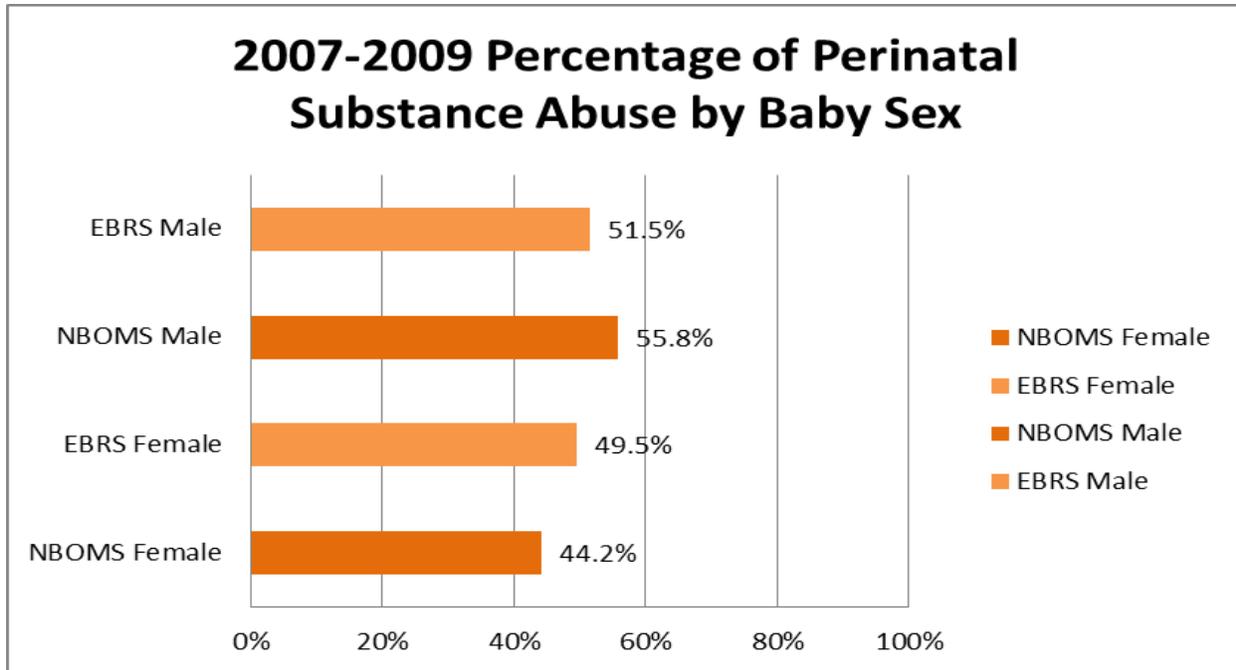
Table 1

Frequency of Perinatal Substance Abuse by Category, 2007, 2008, 2009, and 2007-2009 Combined				
Category	2007	2008	2009	2007-2009
Alcohol	8	8	5	21
Cocaine	41	43	42	126
Hallucinogenic Agents	25	93	10	128
Narcotics	33	48	121	202
Other Substances	81	15	0	96
Unspecified Noxious Substances	17	1	0	18
Total	205	208	178	591

Sex of Newborn

The NBOMS data reports more males were born to mothers with perinatal substance abuse (55.8%) than females (44.2%). EBRs data for Nevada births to mothers with perinatal substance abuse also reflects a higher percentage of males (51.5%) born than females (49.5%) (Figure 3). More males were born to NBOMS mothers than the EBRs statewide proportion. All Nevada births combined for the years 2007-2009 again reports more males (51.2%) than females (48.8%) born over the study period.

Figure 3



APGAR Scores

According to the Centers for Disease Control (CDC), five criteria—appearance, pulse, grimace, activity, and respiration (APGAR)—can be used to produce a score, ranging from 0 to 10, for newborns to assess their short term prognosis and physical condition. The test is done at one and five minutes after birth. Scores 7 and above are considered normal, 4 to 6 fairly low and 3 and below are regarded as critically low (Figures 4 & 5). The CDC emphasizes the importance of the five minutes score upon the birth outcome.⁴

Average APGAR scores from the NBOMS data were 8 at the 1 minute mark and 9 at the 5 minute mark, which are the same as statewide APGAR scores calculated from EBRs data. In 2010, the national average APGAR 1 minute score was 8 and the APGAR 5 Minute score was 9.⁵ Nevada experience matches that of the national average.

Figure 4

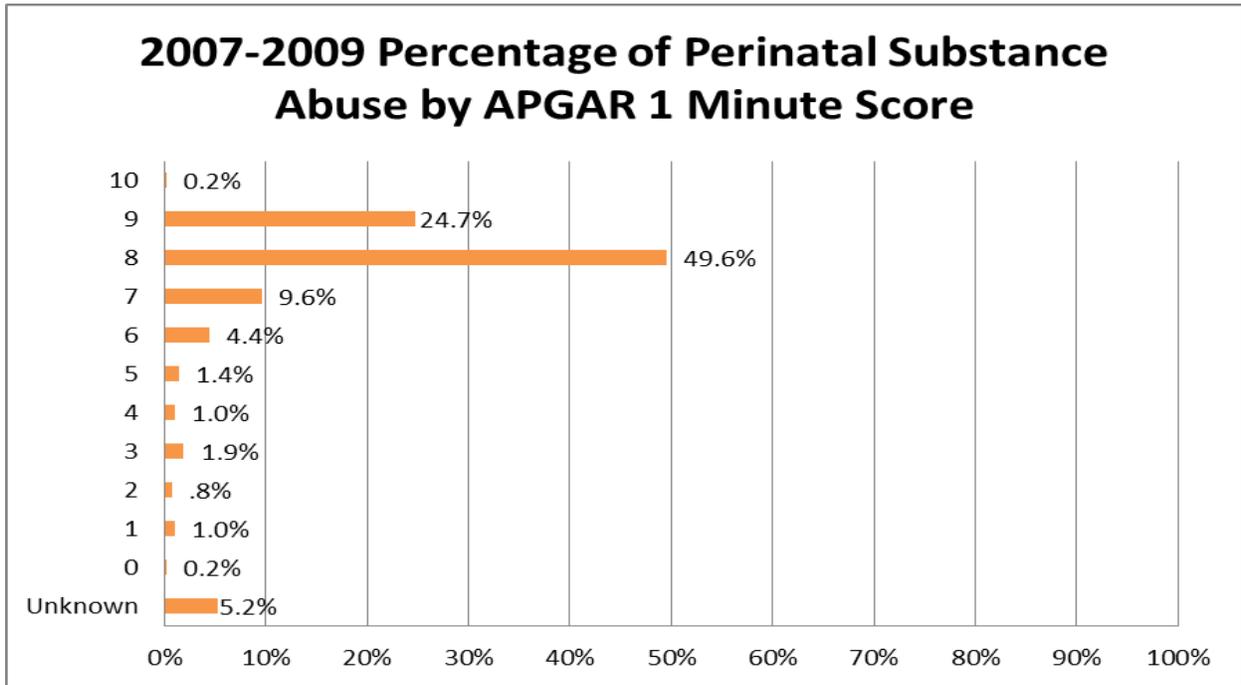
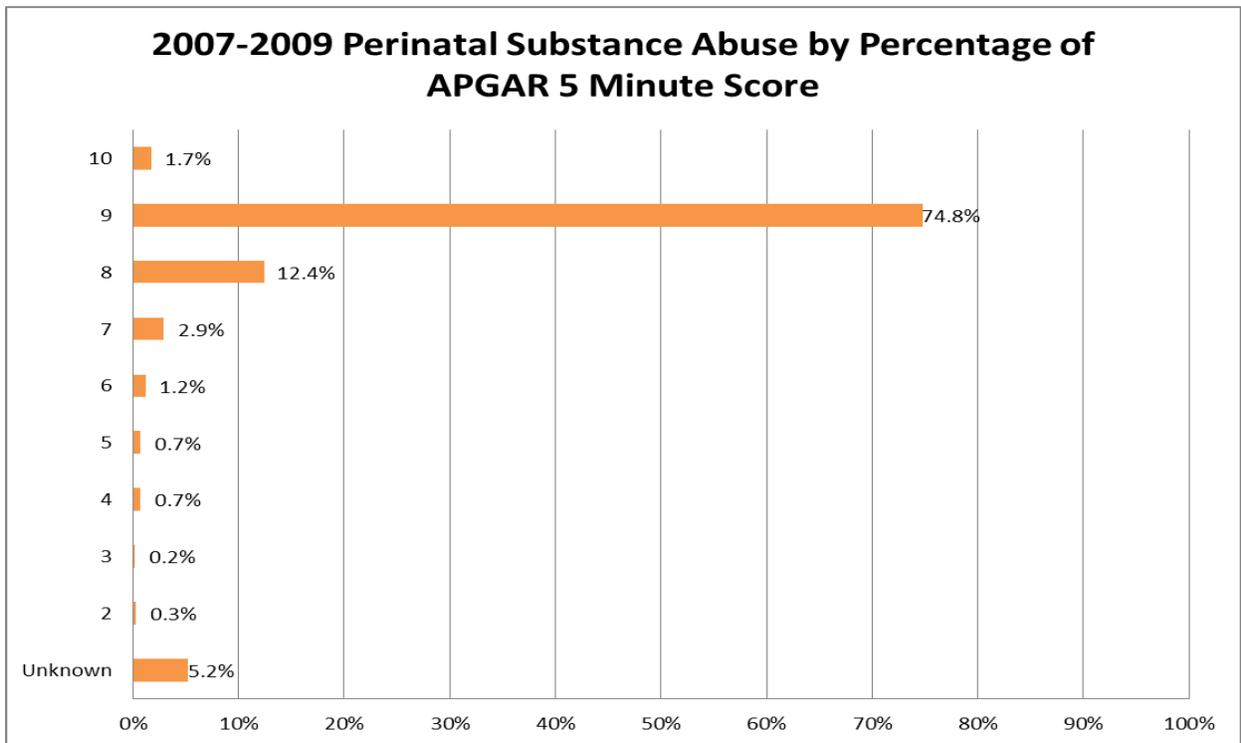


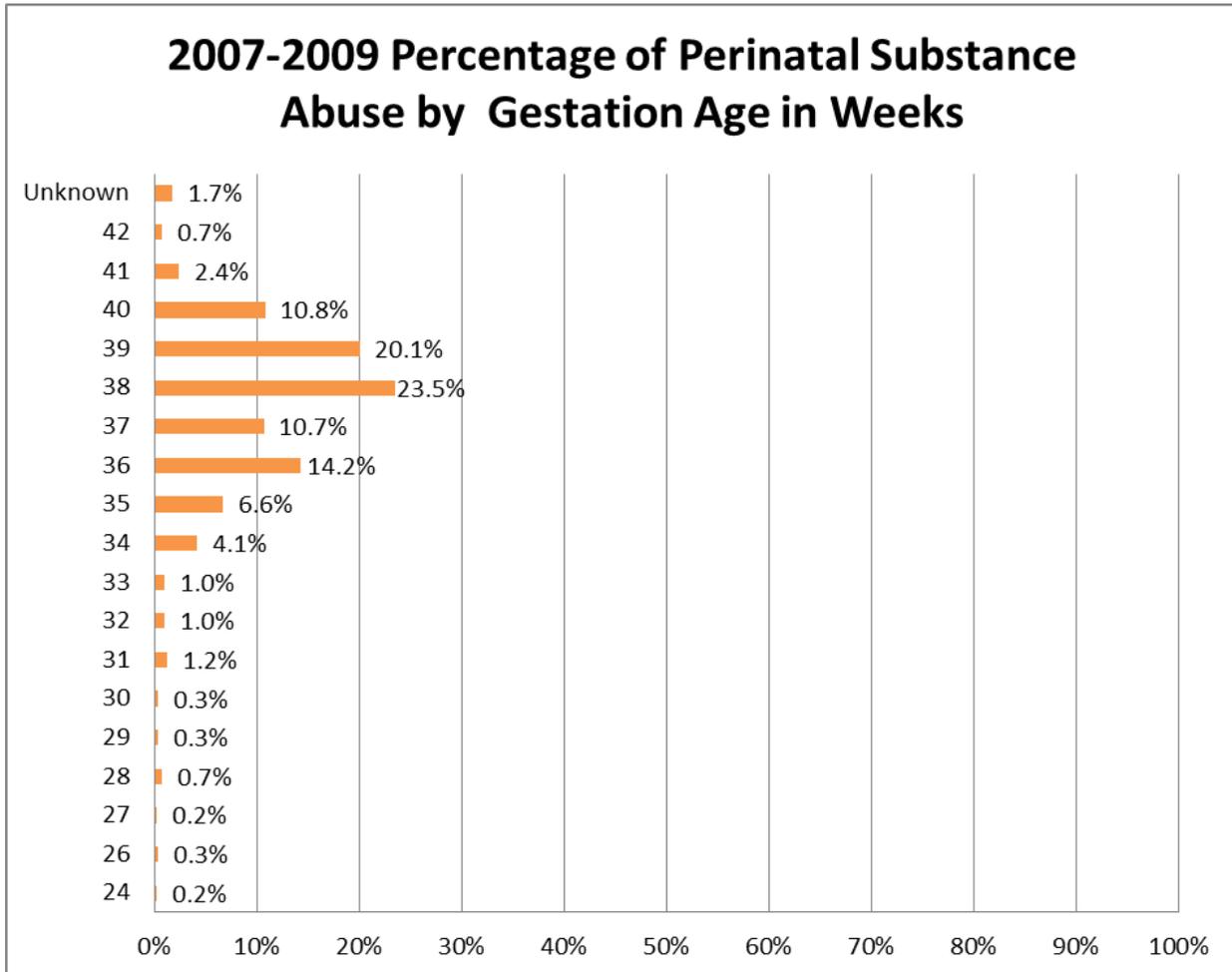
Figure 5



Gestation Age

A review of perinatal substance abuse by gestation age in weeks shows that 82.4% of perinatal substance abused babies attained 36 weeks gestation or higher. This is 9.9 percentage points lower than the EBR5 statewide value of 92.3% (Figure 7).

Figure 6



Mother's Age

An overall look at perinatal substance abuse according to the NBOMS data indicates that mothers 20 to 34 years of age had the highest reported number of perinatal substance abuse cases (Figures 7 and Table 2).

Figure 7

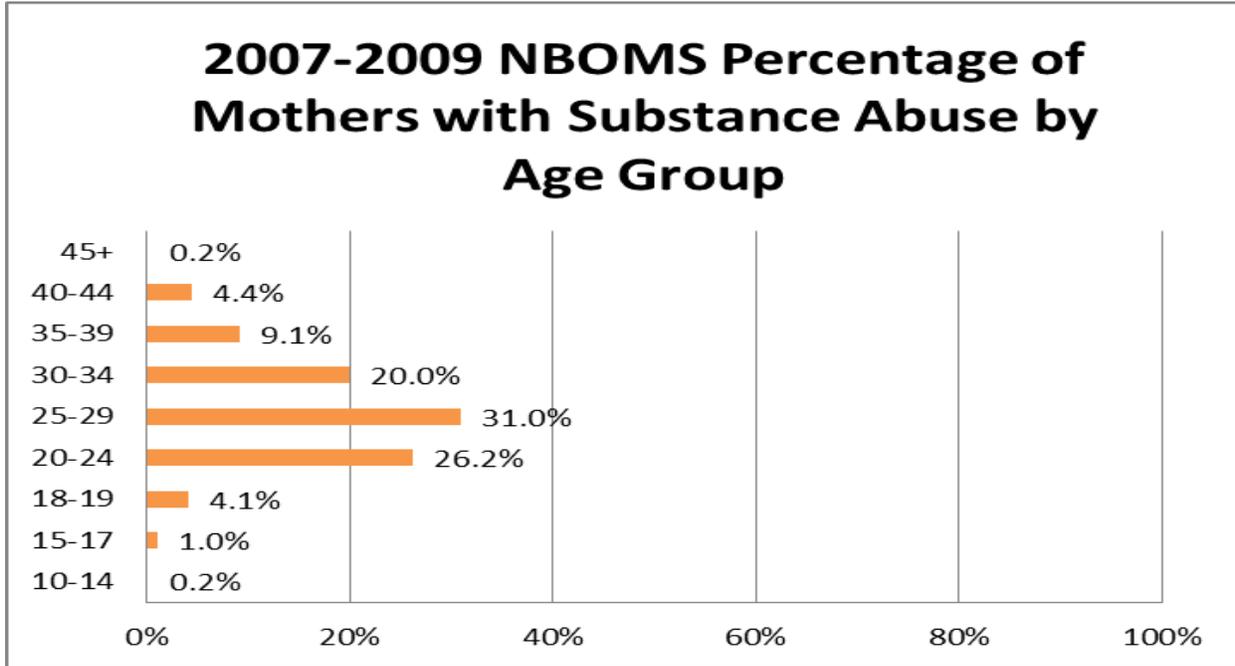


Table 2

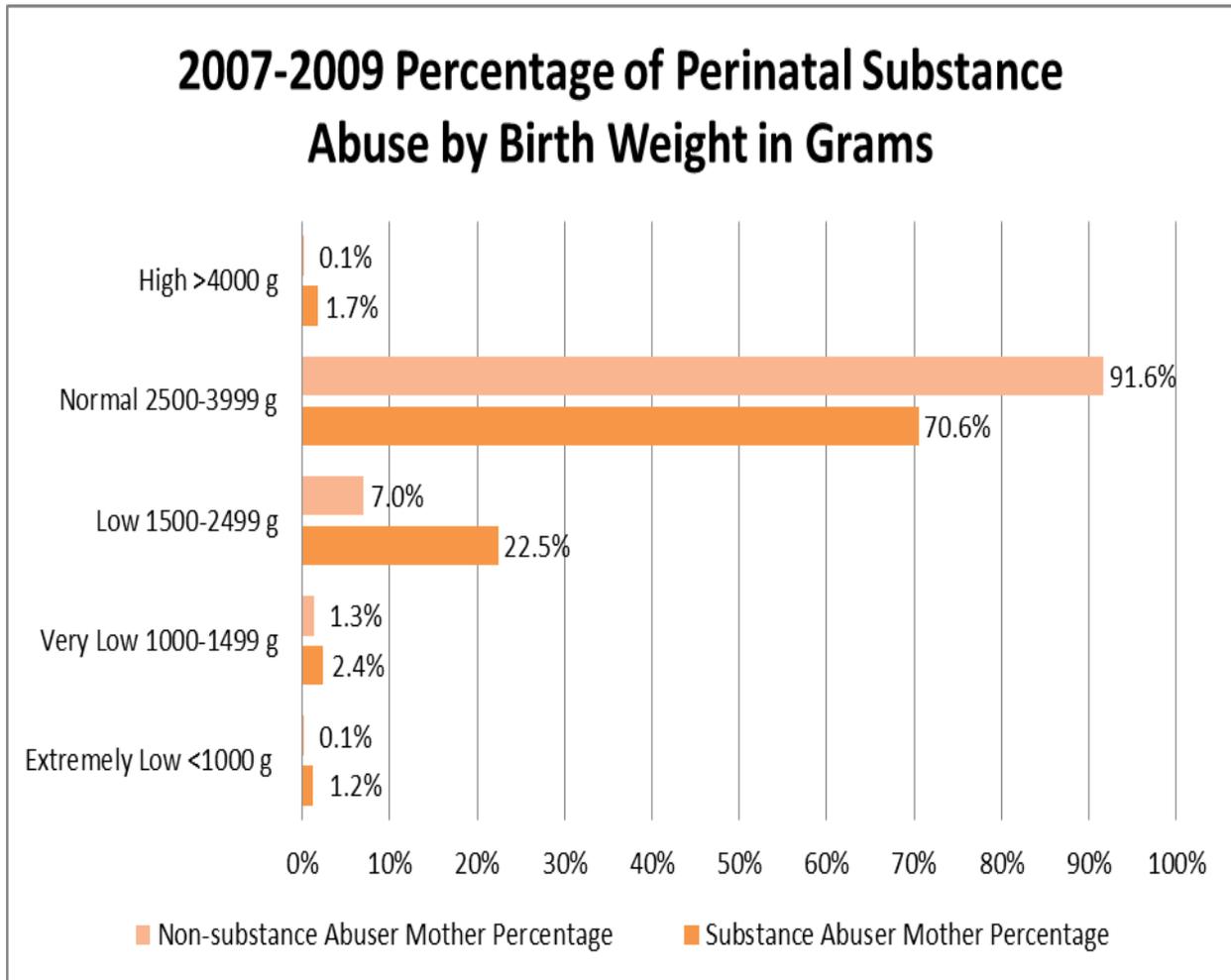
NBOMS Incidence of Mothers with Perinatal Substance Abuse 2007-2009										
Age Years:	10-14	15-17	18-19	20-24	25-29	30-34	35-39	40-44	45+	Total
Frequency:	1	6	24	155	183	118	54	26	1	568

Birth Weight

According to the NBOMS data for 2007-2009, 70.6 percent of infants born to mothers with perinatal substance abuse were normal birth weight between 2,500-3,999 grams, and 26.1 percent were low birth weight, between 1,500-2,499 grams, to extremely low birth weight, less than 1,000 grams.

Birth weight for all Nevada births (2007-2009) indicate 91.6 percent were normal weight, and 8.4 percent were low to extremely low birth weights; therefore, the NBOMS data indicate that low to very low birth weights are nearly three times higher than the EBRIS statewide average (Figure 10).

Figure 8



Additional Resources

2007-2009 Nevada Birth Outcomes Monitoring System

1. Nevada State Health Division, Office of Public Health Informatics & Epidemiology, Nevada Vital Statistics Data, Birth 2009. (2012, December 28).

Retrieved from health.nv.gov/Epidemiology.htm

2. U.S. National Library of Medicine, U.S. Department of Health and Human Services, Office on Women's Health, National Institute of Health, Pregnancy and Substance Abuse. (2012, November 30).

Retrieved from www.nlm.nih.gov/medlineplus/pregnancyandsubstanceabuse.html

3. Centers for Disease Control and Prevention (CDC), National Center on Birth Defects and Developmental Disabilities, Division of Birth Defects and Developmental Disabilities, Fetal Alcohol Spectrum Disorder (FASDs). (2012, November 30).

Retrieved from www.cdc.gov/ncbddd/fasd/index.html

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health.nv.gov/Epidemiology.htm

Citations

2007-2009 Nevada Birth Outcomes Monitoring System

¹ March of Dimes, Pregnancy, Alcohol and Drugs, Illicit Drug Use During Pregnancy. (2012, November 30).

Retrieved from www.marchofdimes.com/pregnancy/alcohol_illicit_drug.html

² March of Dimes,

Retrieved from www.marchofdimes.com/pregnancy/alcohol_illicit_drug.html

⁶ March of Dimes,

Retrieved from www.marchofdimes.com/pregnancy/alcohol_illicit_drug.html

⁴ Centers for Disease Control and Prevention, National Center for Health Statistics, Monthly Vital Statistics Report, Volume 30, No.1 Supplement, May 6, 1981. (2012, November 30).

Retrieved from www.cdc.gov/nchs/data/mvsvr/supp/mv30_01s.pdf

⁵ Edited by Mary Meghan Ryan. Vital Statistics of the United States, Births, Life Expectancy, Deaths, and Selected Health Data, Fourth Edition, 2010. Bernan Press, United States Data Book Series (2011). ISBN 1598884239. Page 99.

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