

Nevada Infant Deaths and Unsafe Sleep Environment 2017-2018

December 2019

Office of Analytics on behalf of



Nevada Department of Health and Human Services

DIVISION OF PUBLIC AND BEHAVIORAL HEALTH

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Background and Purpose

The purpose of this report is to identify trends of infant mortality and unsafe sleep related infant mortality, while providing insight into infant and maternal characteristics associated with unsafe sleep related infant deaths. Due to the small counts of unsafe sleep related infant death cases by year, this report combines 2017 and 2018 data to meet confidentiality criteria and statistical reliability.

Unsafe sleep related infant deaths were identified by using ICD-10 codes W75 for accidental suffocation and strangulation in bed (ASSB), T71 for asphyxia, R99 and R96 for undetermined cause and R95 for Sudden Unexplained Infant Death Syndrome (SIDS). Cases with R95, R96, and R99 were further reviewed to see if they were unsafe sleep related deaths. All the findings from this report are for Nevada residents.

Summary of Findings

Trends of Infant Mortality and Unsafe Sleep Related Infant Mortality

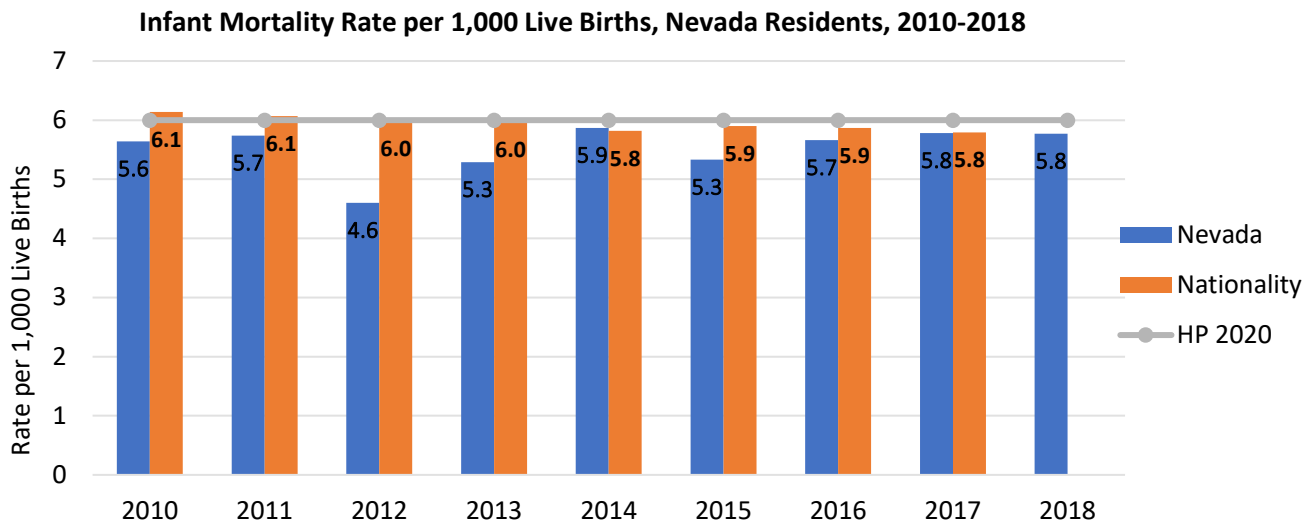
- Nevada infant mortality rates were lower than or the same as national rates, except for in 2014.¹
- There was no consistent increasing or decreasing trend in unsafe sleep related infant mortality. The highest rate was in 2018, at 70.3 per 100,000 live births.

Infant and Maternal Characteristics Associated with Unsafe Sleep Related Infant Deaths

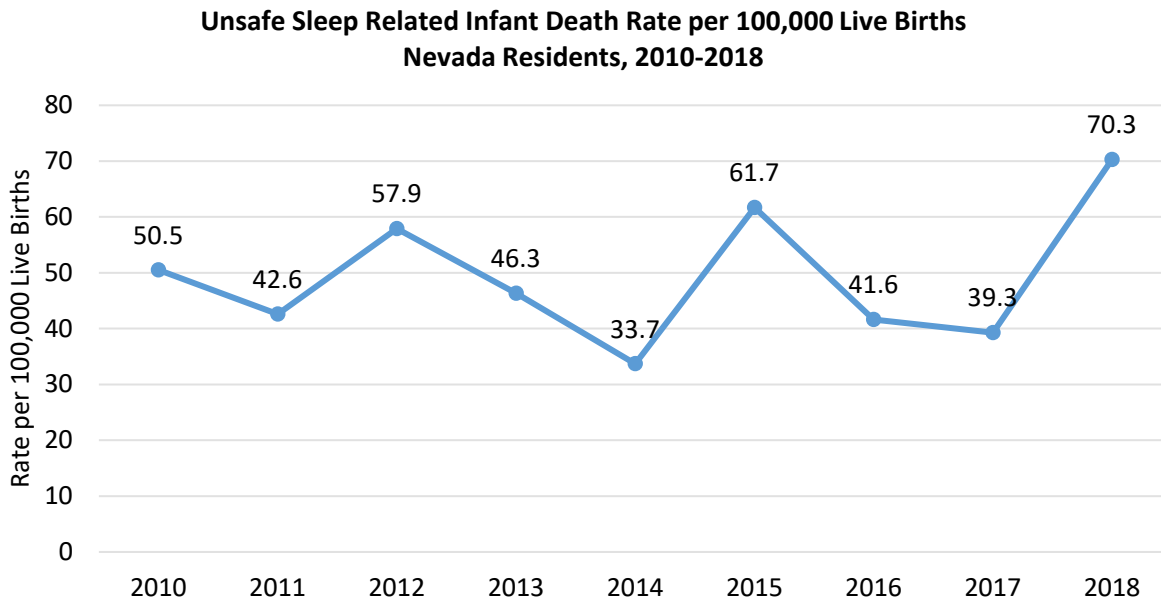
- About 85% of unsafe sleep infant deaths happened before seven months of age, with it being most frequent between one month and two months of age. Fifty-nine percent (59%) of the infant deaths were male. Fifteen percent (15%) were born prematurely (<37 gestation weeks). Twenty-one percent (21%) were born with low birth weight (<2,500g). Thirteen percent (13%) were admitted to the Neonatal Intensive Care Unit (NICU) at birth.
- Seventy-seven percent (77%) of the mothers with infants who died from unsafe sleep related causes were younger than 30 years old, 33% were Black non-Hispanic, 62% were high school graduate or less, 82% lived in Clark County, 56% had Medicaid, 31% were enrolled in WIC, 15% received no prenatal care, 15% had inadequate prenatal care, 69% had at least one previous live birth, 64% breastfed at hospital discharge and 15% used tobacco before or during pregnancy.
- Low birth weight (<2,500g) infants were at higher risk of unsafe sleep related infant death.
- Younger mothers had a higher rate of unsafe sleep related infant mortality.
- American Indian/Alaska Native non-Hispanic and Black non-Hispanic mothers had higher rates of unsafe sleep related infant mortality.
- Mothers who received no prenatal care during pregnancy had higher rates of unsafe sleep related infant mortality.
- Mothers who used tobacco before or during pregnancy had higher rates of unsafe sleep related infant mortality.
- Mothers who breastfed at discharge had lower rates of unsafe sleep related infant mortality.

Trends of Infant Mortality and Unsafe Sleep Related Infant Mortality, 2010-2018

Nevada infant mortality rates per 1,000 live births were lower than national rates prior to 2017, except for in 2014.¹ Nevada had the same infant mortality rate as the nation in 2017.¹ Nevada's infant mortality rates were lower than the Healthy People 2020 target rate 6.0 per 1,000 live births in all years, 2010-2018.²



There was no consistent increasing or decreasing trend in unsafe sleep related infant death rates in Nevada from 2010 to 2018, with the highest rate in 2018, at 70.3 per 100,000 live births.

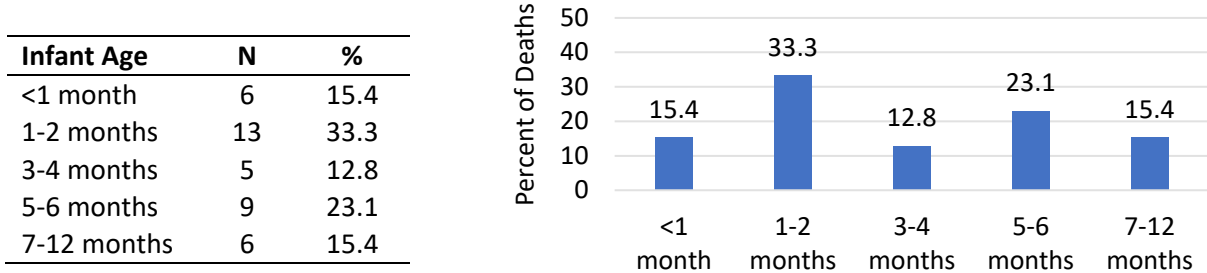


The following pages of this report will provide findings of the 2017 and 2018 data.

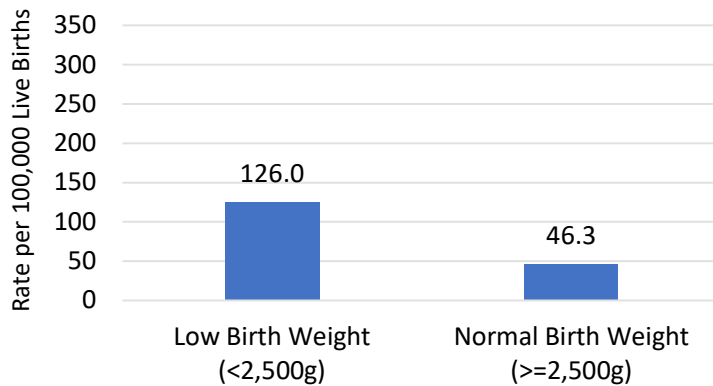
Infant Characteristics in Unsafe Sleep Related Infant Deaths, 2017-2018

Unsafe Sleep Related Infant Deaths by Infant Age, Nevada 2017-2018

About 85% of infant sleep related deaths happened before seven months of age, with it being most frequent between one month and two months of age.



Unsafe Sleep Related Infant Deaths by Birth Weight, Nevada 2017-2018



Birth weight is a significant factor associated with infant sleep related deaths ($p=0.0119$, Table 1). Babies who were born with low birth weight (<2,500g) were almost three times more likely to die from sleep-related causes than those who were born with normal birth weight ($\geq 2,500g$) (126.0 versus 46.3 per 100,000 live births).

Table 1. Infant Characteristics in Unsafe Sleep Related Infant Deaths Compared to Live Births, Nevada, 2017-2018

Infant Characteristic	Live Births		Unsafe Sleep Related Infant Deaths			P-Value
	N	%	N	%	Rate*	
Gender						
Male	36,473	51.2	23	59.0	63.1	0.3357
Female	34,715	48.8	16	41.0	46.1	
Birth Weight						
Low Birth Weight (<2,500g)	6,350	8.9	8	20.5	126.0	0.0119
Normal Birth Weight ($\geq 2,500g$)	64,833	91.1	30	76.9	46.3	
Unknown	5	0.0	1	2.6	20,000.0	
Gestational Age						
Preterm (<37 weeks)	7,405	10.4	6	15.4	81.0	0.2822
Term (37+ weeks)	63,733	89.5	32	82.1	50.2	
Unknown	50	0.1	1	2.6	2,000.0	
NICU Admission						
Yes	7,071	9.9	5	12.8	70.7	0.5083
No	64,112	90.1	33	84.6	51.5	
Unknown	5	0.0	1	2.6	20,000.0	

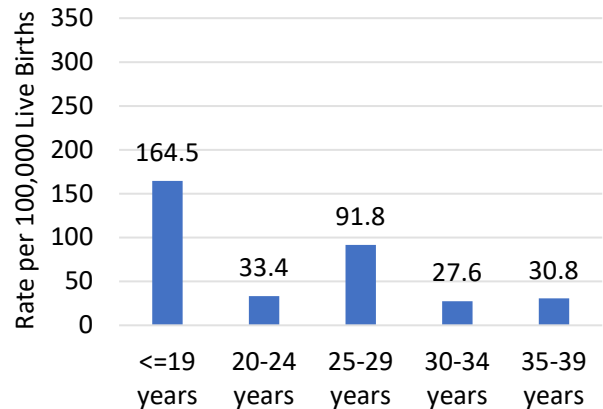
*Unsafe sleep related infant death rates are per 100,000 live births.

Maternal Characteristics in Unsafe Sleep Related Infant Deaths, 2017-2018

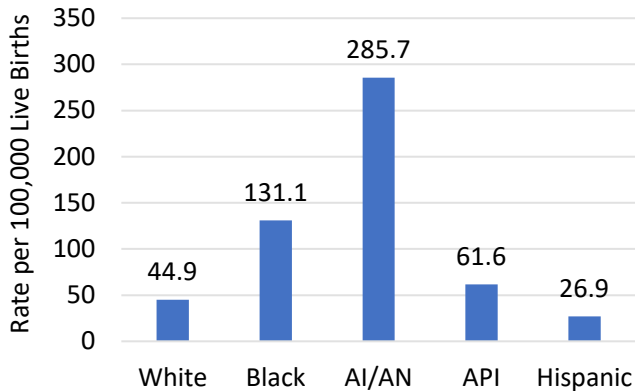
Maternal Demographics

Unsafe Sleep Related Infant Deaths by Maternal Age, Nevada 2017-2018

Maternal age has an impact on unsafe sleep related infant deaths ($p=0.0110$, Table 2). Mothers who were 19 years old or younger had the highest unsafe sleep related infant death rate (164.5 per 100,000 live births), followed by mothers who were between the ages of 25 to 29 (91.8 per 100,000 live births).



Unsafe Sleep Related Infant Deaths by Race and Ethnicity, Nevada 2017-2018



There are racial and ethnic disparities in the rates of unsafe sleep related infant deaths ($p=0.0032$, Table 2). Unsafe sleep related infant death rates among American Indian/Alaska Native non-Hispanic mothers (285.7 per 100,000 live births) and Black non-Hispanic mothers (131.1 per 100,000 live births) were significantly higher than that of White non-Hispanic mothers (44.9 per 100,000 live birth).

Table 2. Maternal Demographics in Unsafe Sleep Related Infant Deaths Compared to Live Births, Nevada, 2017-2018

Maternal Demographic	Live Births		Unsafe Sleep Related Infant Deaths			P-Value
	N	%	N	%	Rate*	
Maternal Age						
<=19 years	3,647	5.1	6	15.4	164.5	0.0110
20-24 years	14,973	21.0	5	12.8	33.4	
25-29 years	20,697	29.1	19	48.7	91.8	
30-34 years	18,128	25.5	5	12.8	27.6	
35-39 years	-	-	-	-	30.8	
>=40 years	2,430	3.4	0	0.0	0.0	
Unknown	-	-	-	-	63.6	
Maternal Race/Ethnicity						
White, non-Hispanic	26,711	37.5	12	30.8	44.9	0.0032
Black, non-Hispanic	9,915	13.9	13	33.3	131.1	
AI/AN, non-Hispanic	-	-	-	-	285.7	
API, non-Hispanic	-	-	-	-	61.6	
Hispanic	26,056	36.6	7	17.9	26.9	
Other	128	0.2	0	0.0	0.0	
Unknown	1,186	1.7	1	2.6	84.3	
Maternal Education						
Less than High School	11,477	16.1	8	20.5	69.7	0.1783
High School Graduate	22,884	32.1	16	41.0	69.9	
Some College	20,656	29.0	11	28.2	53.3	
College Graduate or Higher	14,227	20.0	2	5.1	14.1	
Unknown	1,944	2.7	2	5.1	102.9	
Maternal Residence Region						
Clark County	53,510	75.2	32	82.1	59.8	0.2886
Washoe County	10,553	14.8	2	5.1	19.0	
Rest of State	-	-	-	-	56.6	
Unknown	-	-	-	-	1,724.1	
Payment Source						
Medicaid	32,935	46.3	22	56.4	66.8	0.3431
Private	30,046	42.2	12	30.8	39.9	
Self-pay	-	-	-	-	85.0	
Other	-	-	-	-	23.4	
Unknown	412	0.6	1	2.6	242.7	
WIC Enrollment						
Yes	23,232	32.6	12	30.8	51.7	0.8827
No	45,956	64.6	25	64.1	54.4	
Unknown	2,000	2.8	2	5.1	100.0	

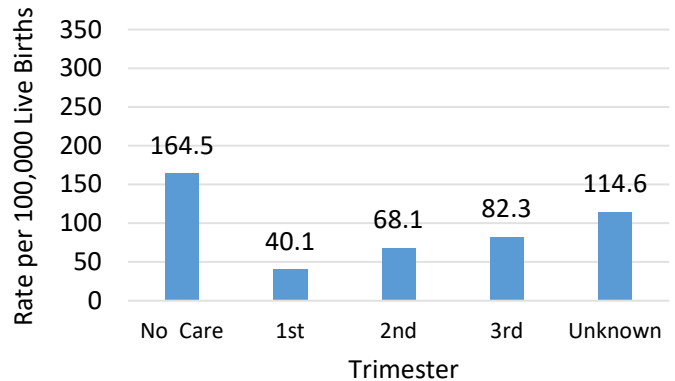
-Data are suppressed due to confidentiality.

*Unsafe sleep related infant death rates are per 100,000 live births.

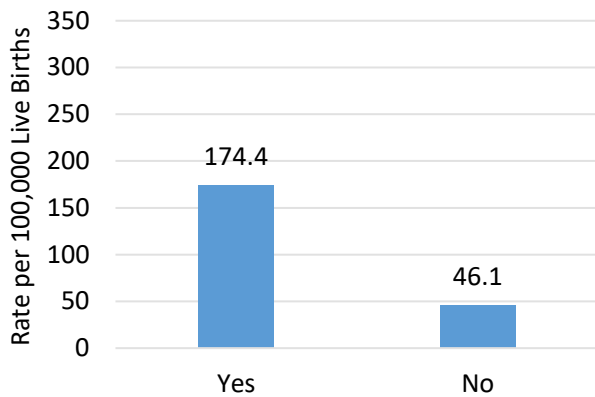
Maternal Health Behaviors

Unsafe Sleep Related Infant Deaths by Prenatal Care Initiation, Nevada 2017-2018

The unsafe sleep related infant death rate was highest among mothers who received no prenatal care with 164.5 per 100,000 live births ($p=0.0330$, Table 3). Mothers who received no prenatal care accounted for 5.1% of all live births but 15.4% of infant deaths due to unsafe sleep environment (Table 2).



Unsafe Sleep Related Infant Deaths by Tobacco Use, Nevada 2017-2018



Tobacco use is another maternal risk factor associated with unsafe sleep related infant death cases ($p=0.0117$, Table 3). Mothers who used tobacco before and during pregnancy accounted for 4.8% of all live births but 15.4% of unsafe sleep related infant deaths (Table 3). The unsafe sleep related infant death rate was almost four times higher among mothers who used tobacco before and during pregnancy compared to mothers who didn't (174.4 versus 46.1 per 100,000 live births).

Unsafe Sleep Related Infant Deaths by Breastfeeding, Nevada 2017-2018

Breastfeeding is a protective factor to reduce unsafe sleep related infant deaths ($p=0.0135$, Table 3). The unsafe sleep related infant death rate was more than two times lower among mothers who breastfed at discharge than among mothers who did not breastfed (44.5 versus 103.6 per 100,000 live births).

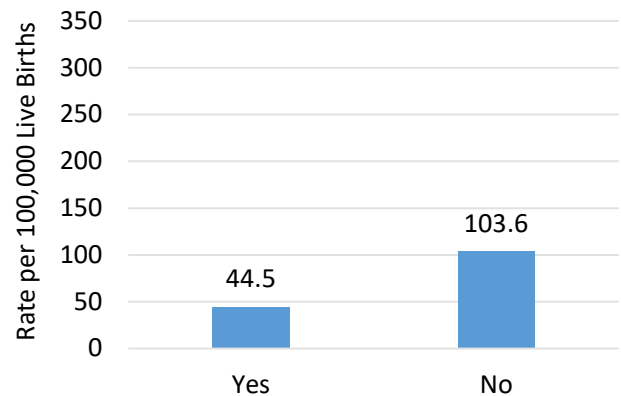


Table 3. Maternal Health Behaviors in Unsafe Sleep Related Infant Deaths Compared to Live Births, Nevada, 2017-2018

Maternal Health Behavior	Live Births		Unsafe Sleep Related Infant Deaths			P-Value
	N	%	N	%	Rate*	
Prenatal Care Initiation						
No Care	3,647	5.1	6	15.4	164.5	0.0330
First Trimester	49,872	70.1	20	51.3	40.1	
Second Trimester	11,742	16.5	8	20.5	68.1	
Third Trimester	-	-	-	-	82.3	
Unknown Start Date	-	-	-	-	114.6	
Unknown	1,751	2.5	1	2.6	57.1	
Adequacy of Prenatal Care						
Inadequate	8,328	11.7	6	15.4	72.0	0.2597
Intermediate	5,628	7.9	5	12.8	88.8	
Adequate	26,557	37.3	11	28.2	41.4	
Adequate Plus	23,464	33.0	8	20.5	34.1	
Unknown	7,211	10.1	9	23.1	124.8	
Parity						
0 Previous Live Births	25,631	36.0	11	28.2	42.9	0.3704
1 Previous Live Births	20,259	28.5	10	25.6	49.4	
2+ Previous Live Births	23,678	33.3	17	43.6	71.8	
Unknown	1,620	2.3	1	2.6	61.7	
Breastfeeding at Discharge						
Yes	56,149	78.9	25	64.1	44.5	0.0135
No	12,547	17.6	13	33.3	103.6	
Unknown	2,492	3.5	1	2.6	40.1	
Tobacco Use						
Yes	3,441	4.8	6	15.4	174.4	0.0117
No	67,310	94.6	31	79.5	46.1	
Probably	182	0.3	0	0.0	0.0	
Unknown	255	0.4	2	5.1	784.3	

-Data are suppressed due to confidentiality.

*Unsafe sleep related infant death rates are per 100,000 live births.

References

1. Centers for Disease Control and Prevention (CDC).
<https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmorbidity.html>
2. Healthy People 2020.
<https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4825>