

Infant Deaths and Sleeping Environments in Washington State: Data Summary

The goal of this data summary is to provide information about the risk factors for sleep-related infant deaths in Washington State. Data are from the Pregnancy Risk Assessment Monitoring System (PRAMS) survey, national and state death certificates, and Washington Child Death Review. ^{1,2,3,4}

Current National Safe Sleep Recommendations

Current recommendations for safe infant sleep from the American Academy of Pediatrics include the following: ⁵

- Back to sleep for every sleep
- Use of a firm sleep surface
- Room-sharing without bed-sharing
- Keeping soft objects and loose bedding out of the crib
- Consider offering pacifier at nap time and bed time
- Avoiding smoke exposure during pregnancy and after birth
- Avoid alcohol and illicit drug use during pregnancy and after birth
- Breastfeeding is recommended
- Avoid overheating

What We Know About Safe Sleep Environments in Washington

Sleep Position

- According to Washington Pregnancy Risk Assessment Monitoring System (PRAMS) survey data, in 2013 about 82 percent of mothers reported that they most often lay their baby down to sleep on his or her back. ^{1,a} This rate has increased from 43 percent when data collection began in 1996, but has leveled over the last few years (Figure 1). ^{1,a}
- Putting infants on their backs to sleep varies by race/ethnicity. In 2011-2013, placing infants to sleep on their backs ranged from about 61 percent among Native Hawaiian and Pacific Island mothers to about 82 percent among non-Hispanic White mothers (Figure 2). ^{1,a}
- Putting infants on their backs to sleep varies by the mother's age. In 2012-2013, only 65 percent of mothers under 20 years of age reported that they most often put their infant to sleep on his or her back, compared to 80 percent of women 20 years and over (figure not shown). ^{1,a}

Figure 1. Percent of Infants Placed to Sleep on Back, Washington PRAMS, 1996-2013

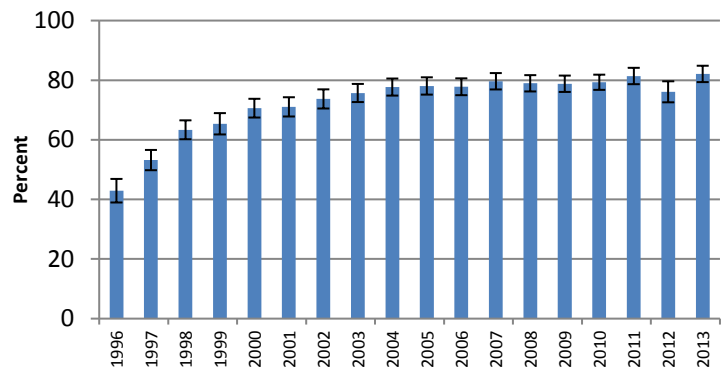
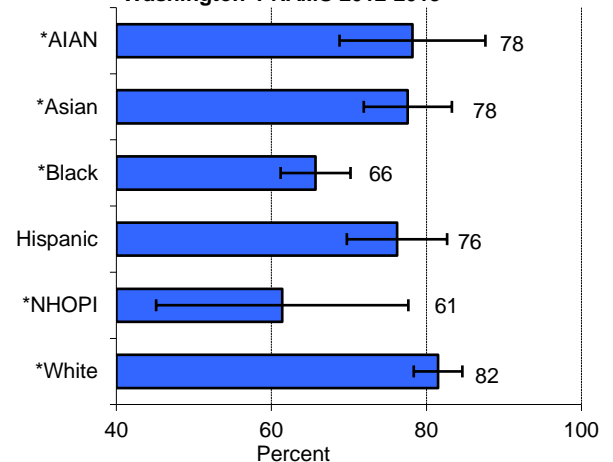


Figure 2. Percent of Infants Placed to Sleep on Back by Race, Washington PRAMS 2012-2013



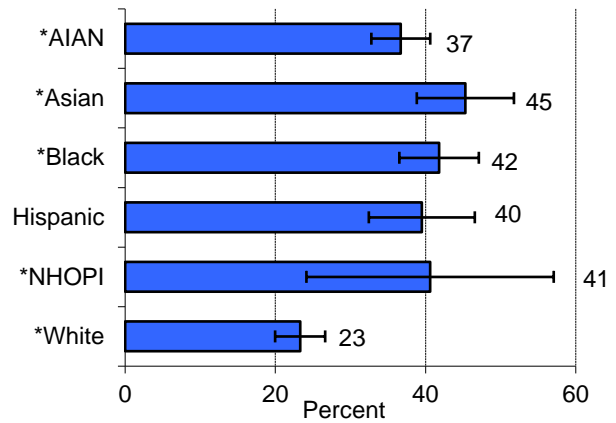
*Non-Hispanic
 AIAN: American Indian/Alaska Native
 NHOPI: Native Hawaiian/Other Pacific Islander

What We Know About Safe Sleep Environments in Washington

Bed Sharing

- In 2013, about 28 percent of Washington mothers reported that their infant *always or often* sleeps in the same bed with her or someone else. There is a decreasing trend in this rate since data collection began in 2000 (Figure 4). ^{1,b}
- In 2012-2013, about 19 percent of women reported that their infant *always* shares a bed, 11 percent *often* share a bed, 17 percent *sometimes* share a bed, 21 percent *rarely* share a bed, and 33 percent *never* share a bed (Figure 5). ^{1,b}
- Bed sharing varies by race/ethnicity. In 2012-2013, *always or often* placing infants to sleep in the same bed as the mother or someone else was higher among women of all other races than among non-Hispanic white women (Figure 3). ^{1,b}
- Bed sharing varies by breastfeeding status. In 2012-2013, about 35 percent of breastfeeding women reported that their infant *always or often* sleeps in the same bed with her or someone else, compared to 21 percent of non-breastfeeding women (Figure not shown). ^{1,b}

Figure 3. Percent of Mothers Who Report their Baby Always or Often Sleeps in the Same Bed with Her or Someone Else by Race, Washington PRAMS 2012-2013



*Non-Hispanic
AIAN: American Indian/Alaska Native
NHOPI: Native Hawaiian/Other Pacific Islander

Figure 4. Percent of Mothers Who Report Their Baby Always or Often Sleeps in the Same Bed with Her or Someone Else, Washington PRAMS, 2000-2013

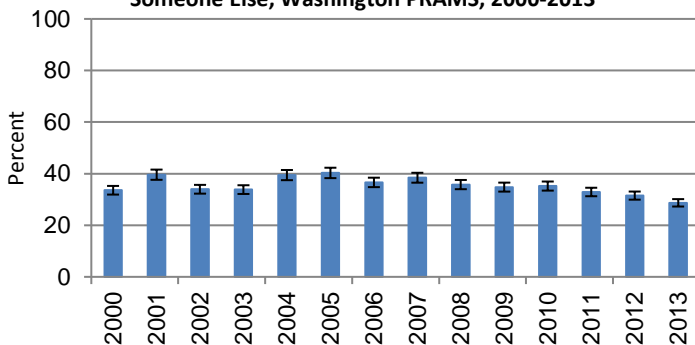
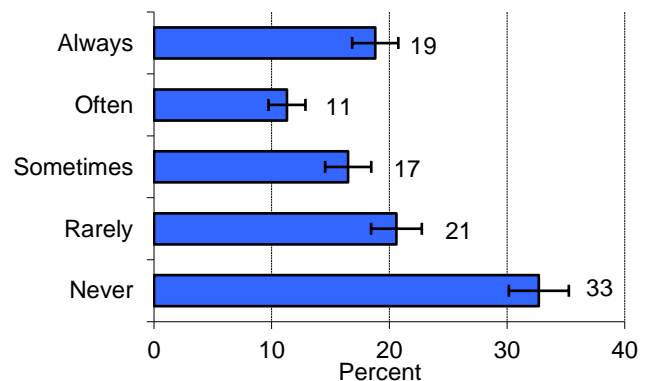


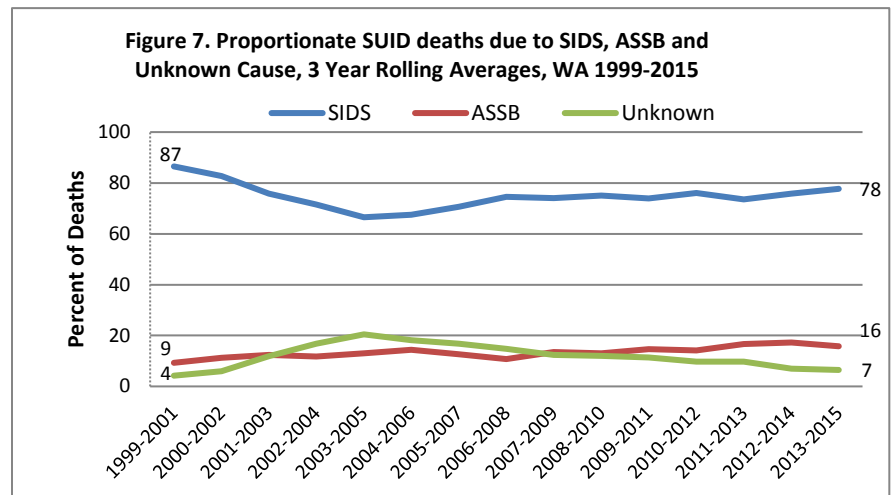
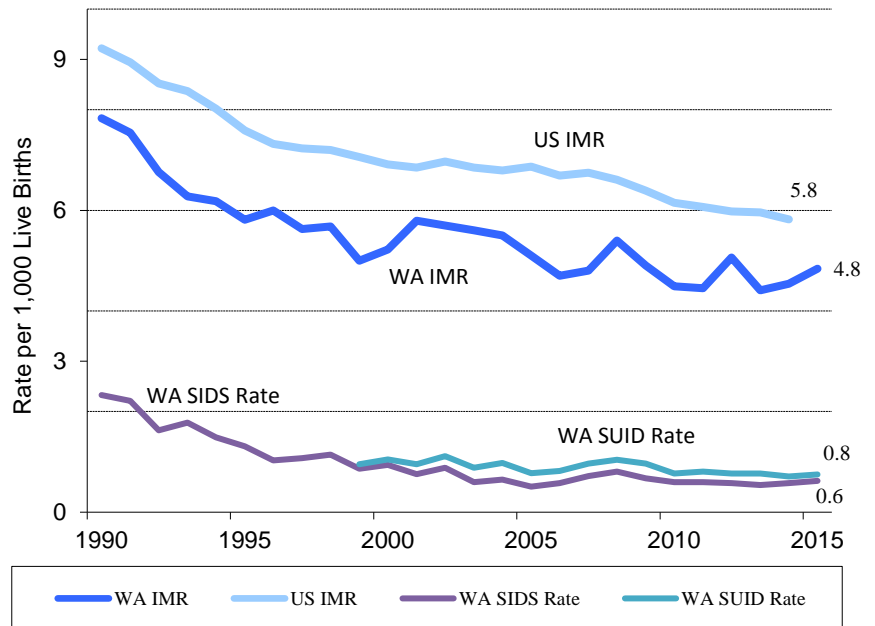
Figure 5. Bed Sharing Frequency Reported by Mothers, Washington PRAMS 2012-2013



What We Know About Infant Deaths

- Over the past 20 years, Washington’s infant mortality rate declined substantially from 7.8 per 1000 live births in 1990 to 4.8 per 1000 in 2015. In 2015, there were 431 infant deaths among Washington residents. The preliminary US infant mortality rate in 2014 was 5.8 per 1000 (Figure 6).^{2,3}
- In 2015, the leading causes of infant deaths in Washington state were birth defects (about 22 percent), low birth weight (about 13 percent), SIDS (about 13 percent) and maternal pregnancy complications (about 9 percent).²
- Sudden Unexpected Infant Death (SUID) is a broader category of infant death that includes SIDS deaths, Accidental Suffocation and Strangulation in Bed (ASSB), and other infant deaths of unknown cause.⁶
- SIDS is defined as the sudden, unexpected death of an infant that remains unexplained after a thorough investigation that includes autopsy, death scene investigation and review of the infant’s clinical history.⁷ However, adherence to this definition varies and diagnostic criteria for deaths due to ASSB and unknown cause are still under development.⁸
- Nationally, the overall rate of SUID deaths in the United States remained level from 1996 to 2004. However, there was a decrease in the proportion of SUID deaths due to SIDS, while the proportion of deaths due to ASSB and other unknown causes increased. (Data not shown.) This suggests that the coding of some of these deaths has changed from SIDS to ASSB over time.⁹
- Washington trend data on infant deaths appear similar to the nation, but the numbers are small and fluctuate greatly.
- Figure 7 shows the proportions SUID deaths due to SIDS, ASSB and unknown cause.^{2, c} From 1999-2015, the proportion of deaths due to SIDS decreased while there was an increase in the proportion due to ASSB or unknown cause.

**Figure 6. Infant Mortality Rates (IMR)
WA and US, 1980-2015**



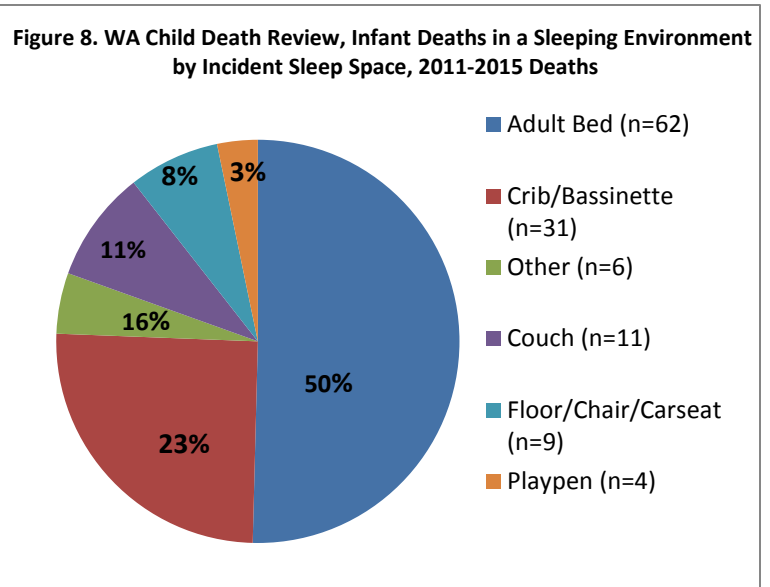
Child Death Review (CDR)

About CDR:

- Child Death Review (CDR) teams in Washington review unexpected deaths of children, including deaths that occur in a sleeping environment. Due to funding issues, not every county has a CDR team. In 2015, about 6 of Washington’s 35 local health jurisdictions had a CDR team.⁴
- CDR teams do not necessarily review all deaths that occur in their county. Teams choose which deaths to review and the criteria for review vary from county to county. After review, teams complete a standardized case report form and enter their case report data into a secure national database.⁴

Sudden Unexpected Infant Death (SUID) cases in CDR:

- According to death certificate data, 2,044 infant deaths among Washington residents occurred between 2011 and 2015. In this time frame there were 256 infant deaths due to SIDS, 23 deaths due to unknown cause, and 55 deaths due to ASSB, for a total of 334 infant deaths in the SUID category. 123 (37 percent) of these deaths were reviewed by CDR teams, while 211 of the deaths were not reviewed by CDR teams.^{2,4}
- Figure 8 shows sleep-environment related risk factors for the 123 SUID deaths that were reviewed by CDR teams.⁴
- Of the 123 SUID deaths reviewed by CDR teams, 62 (50 percent) of the infants were put to sleep on an adult bed. Only 31 (23 percent) were put to sleep in a crib or bassinette (Figure 8).⁴
- A national study of CDR data from nine states (not including Washington) found that in about 47 percent of the over 3,000 reviewed SUID deaths the infant was put to sleep in an adult bed. In about 24 percent of deaths the infant was in a crib or bassinet.⁹¹⁰This is consistent with the CDR sleep location findings in Washington state.



Sleep-environment related deaths:

- Washington CDR teams reviewed 133 infant deaths in a sleep environment that occurred between 2011-2015.⁴
- Of the SUID deaths that were reviewed by CDR teams, the cause of death as listed on the death certificate were as follows:
 - SIDS, 54 deaths (44 percent)
 - Asphyxia, 19 deaths (15 percent)
- Sleep environment data are only collected through the CDR teams. We have no data on sleep risk factors for the 211 SUID deaths between 2011-2015 that were *not* reviewed by CDR teams.⁴

Table 1 summarizes sleep-environment risk factors for the 133 infant deaths in a sleep environment occurring between 2011 and 2015 that were reviewed by Washington state CDR teams.

Table 1

Number (Percent) with Risk Factor	
Risk Factor	Deaths (n=133)
<i>Sleep position</i>	
Put to sleep on back	73 (55%)
Found on back	39 (29%)
<i>Infant found in physical contact with</i>	
Blankets/comforters	17 (13%)
Pillow	9 (7%)
<i>Other persons</i>	
Adult alcohol and/or drug impaired	20 (15%)
Caregiver fell asleep while feeding	7 (5%)
Sleeping with other people	78 (59%)
If sleeping with adult, adult obese?	9 (7%)
Airway obstructed by person or object	49 (37%)
Among infants not found in crib/bassinette, no crib/bassinette in the home	15 (11%)

- In 73 (55 percent) of the deaths, infants were put on their backs to sleep. In 39 (42 percent) of the deaths, the infants were found on their backs.
- In 78 (59 percent) of the deaths, the infants were sleeping with other people. In 75 (56 percent) of the deaths, infants were sleeping with only adults. In 13 (10 percent) of the deaths, infants were sleeping with only children.
- In 20 (23 percent) of the 121 cases in which the infant was sleeping with an adult, the adult was obese.
- In 17 (13 percent) of the deaths, the infants were found in physical contact with blankets and/or comforters.
- In 9 (7 percent) of the deaths, the infants were found in physical contact with pillows.
- In 20 (15 percent) of the deaths, the supervising adult was alcohol and/or drug impaired.
- In 49 (37 percent) of the deaths, the infant’s airway was blocked by a person or object.
- Among the 100 infants *not* put to sleep in a crib/bassinette, 15 (15 percent) did not have a crib or bassinette in the home.

NOTE: In order to be consistent with the reports produced by the National Center for Fatality Review and Prevention, SUID deaths in this update are not broken down into 4 categories (SIDS, Asphyxia, Unknown, Other cause) as done previously. Results from the 2013 report cannot be compared with this report.

Notes

1. *Washington Pregnancy Risk Assessment Monitoring System (PRAMS)* [Data file]. Olympia WA: Washington State Department of Health.
 2. *Community Health Assessment Tool (CHAT)* [Vital statistics]. Olympia WA: Washington State Department of Health.
 3. National Vital Statistics Reports. Accessed 28 October 2016 from http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_06.pdf and http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_03.pdf
 4. National MCH Center for Child Death Review. Accessed 14 December 2016. <http://childdeathreview.org/>
 5. SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment. Task Force on Sudden Infant Death Syndrome. Accessed 8 December 2016 from <http://pediatrics.aappublications.org/content/pediatrics/early/2011/10/12/peds.2011-2284.full.pdf>
 6. Centers for Disease Control and Prevention. Sudden Unexpected Infant Death and Sudden Infant Death Syndrome. Accessed 29 October 2012 from <http://www.cdc.gov/sids/>
 7. Willinger et al (1991). Defining the sudden infant death syndrome (SIDS): deliberations of an expert panel convened by the National Institute of Child Health and Human Development. *Pediatr Pathol* 11(5):677-684.
 8. Shapiro-Mendoza et al (2012). The Sudden Unexpected Infant Death Case Registry: A Method to Improve Surveillance. *Pediatrics* 129(2).
 9. Shapiro-Mendoza et al (2009). US Infant Mortality Trends Attributable to Accidental Suffocation and Strangulation in Bed From 1984 through 2004: Are Rates Increasing? *Pediatrics* 123(2).
 10. Schnitzer PG et al (2012). Sudden unexpected infant deaths: sleep environment and circumstances. *Am J Public Health* 102(6).
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- a) From PRAMS sleep position question “In what one position do you most often lay your baby down to sleep?”
 - b) From PRAMS bed sharing question “How often does your baby sleep in the same bed as you or someone else?”
 - c) ICD 10 codes for WA SUID deaths are R95 (Sudden Infant Death Syndrome), R99 (Other ill-defined and unspecified causes of mortality) and W75 (Accidental suffocation and strangulation in bed).

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