
SUDDEN UNEXPECTED INFANT DEATH REPORT



WISCONSIN
2015

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SUDDEN UNEXPECTED INFANT DEATH REPORT - 2015

Infant mortality is an indicator of a community's health and should elicit a community response. The Keeping Kids Alive in Wisconsin program consists of 55 county-based child death review teams across the state. The death review teams' purpose is to understand the risk factors and circumstances surrounding infant and child deaths to identify opportunities to influence policy and programs that will prevent future deaths.

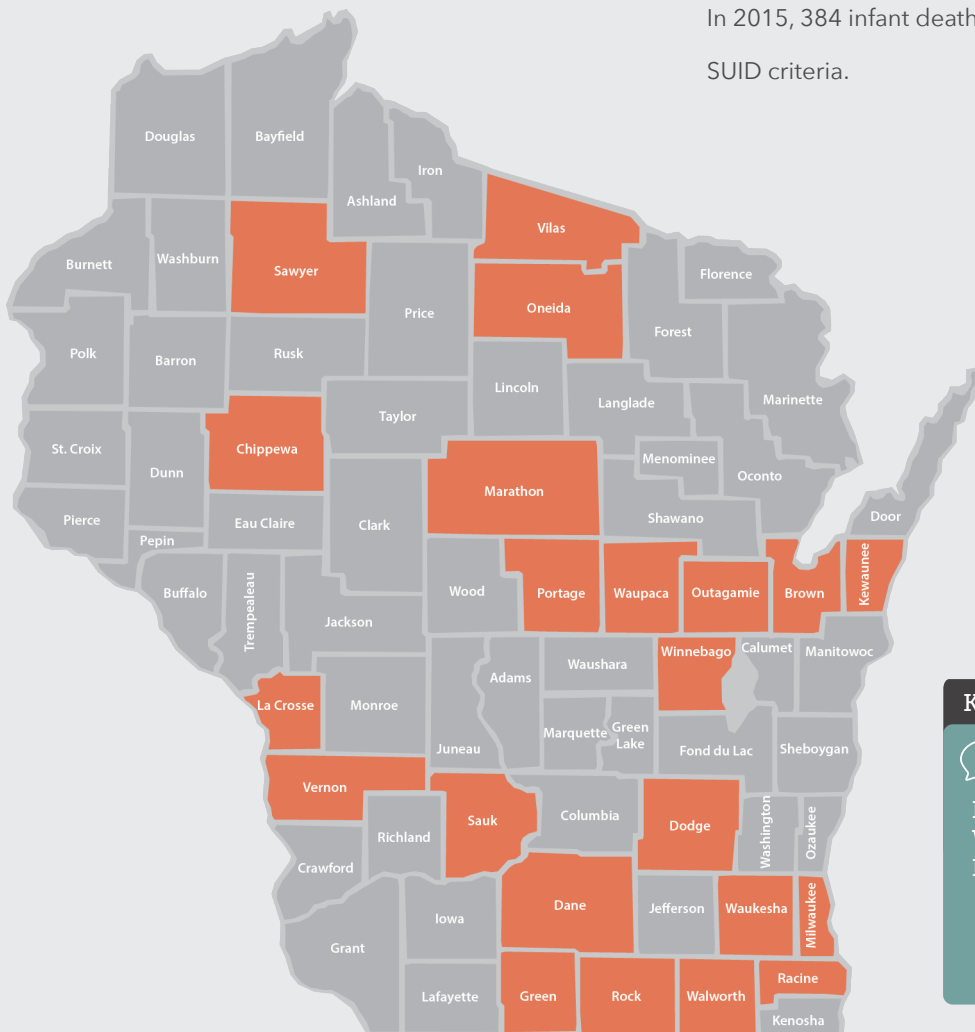
The purpose of this report is to examine a subset of the deaths reviewed by these teams; sudden and unexpected infant deaths in Wisconsin. The Centers for Disease Control and Prevention define a sudden unexpected infant death (SUID) as the death of a child less than 1-year-old that

occurs suddenly and unexpectedly without a clear cause prior to investigation (CDC, 2017).

The deaths included in this report occurred in 2015 among infants with a Wisconsin residence. The cause listed on the death certificate falls into 1 of 3 categories:

- 1. Undetermined:** This includes deaths certified as sudden infant death syndrome (SIDS), sudden unexpected infant death (SUID), or undetermined.
- 2. Asphyxia:** This includes deaths from asphyxia events occurring while the child was sleeping or in the sleep environment.
- 3. Natural causes with unsafe sleep:** This includes conditions such as pneumonia, where sleep factors are listed as a condition leading to death or a significant condition contributing to death on the death certificate.

In 2015, 384 infant deaths occurred and 47 of them met the SUID criteria.



KEY TAKEAWAY



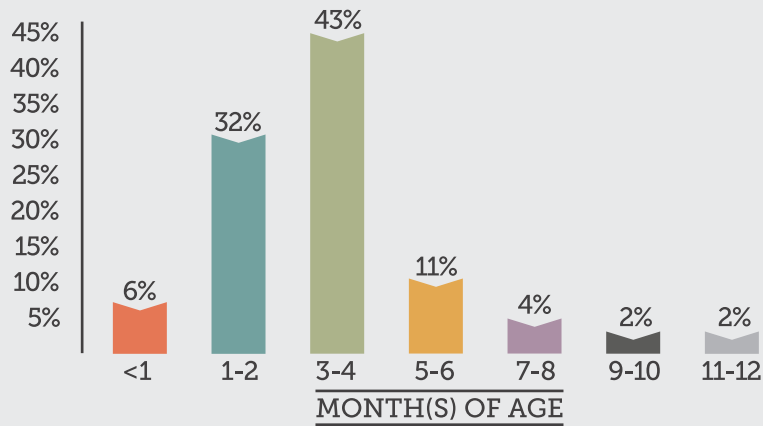
IN 2015, 30 PERCENT OF WISCONSIN COUNTIES EXPERIENCED A SUID.

KEEPING KIDS ALIVE IN WISCONSIN

Infants ages 1 to 4 months accounted for the majority (74 percent) of SUID cases. Only 6 percent were neonates, less than 28 days of age. Comparatively among the 384

infant deaths from all causes in 2015, 70 percent were among neonates (WISH, 2017).

AGE DISTRIBUTION OF SUID CASES, WISCONSIN 2015



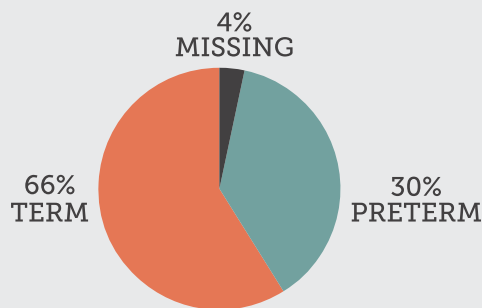
KEY TAKEAWAY

IN THREE-QUARTERS OF ALL SUID CASES, THE INFANT WAS BETWEEN AGES 1 AND 4 MONTHS.

The leading cause of infant mortality is preterm birth (Shapiro et al., 2017). In Wisconsin, 30 percent of SUID infants were preterm compared to 69 percent of infants who

died from all causes in 2015 (WISH, 2017). Only 9 percent of 2015 Wisconsin births were preterm (WISH, 2017).

GESTATIONAL AGE AMONG SUID CASES, WISCONSIN 2015



KEY TAKEAWAY

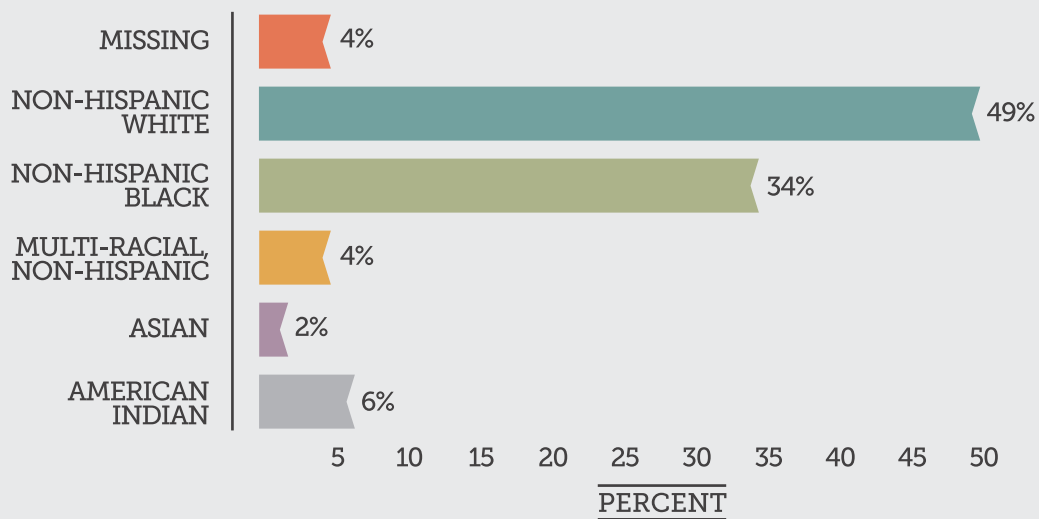
AMONG SUID CASES, 3 IN 10 INFANTS WERE PRETERM; BORN BEFORE 37 WEEKS GESTATION.

SUDDEN UNEXPECTED INFANT DEATH REPORT - 2015

Examination of SUID cases by the race and ethnicity listed on the infant's death certificate and the infant's medical insurance prior to death reveal inequities by race and socioeconomic status. In more than 3 in 10 SUID cases, the infant's race and ethnicity were indicated as non-Hispanic black while only 1 in 10 of the 2015 births in Wisconsin

were among non-Hispanic black women. Comparatively, the infant's race and ethnicity were indicated as non-Hispanic white in nearly half of SUID cases, while 7 in 10 of all 2015 births in Wisconsin were among non-Hispanic white women. None of the 2016 SUID cases had Hispanic ethnicity noted on the death certificate.

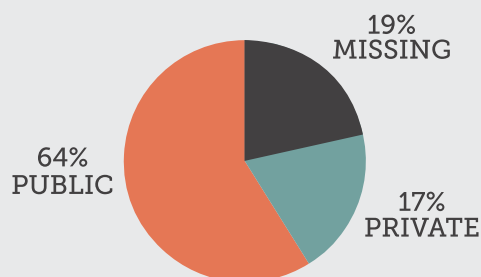
INFANT DEATH CERTIFICATE RACE AMONG SUID CASES, WISCONSIN 2015



The infant's insurance provides an approximation of the family's socioeconomic status. This information can be challenging for child death review teams to gather. Among the 47 SUID cases, the insurance status at time of death was known in 38 cases. Public insurance (Medicaid or

other state-sponsored plan) was confirmed as the infant's insurance in 64 percent of all SUID cases, while in 17 percent of all SUID cases the infant had private insurance coverage.

INSURANCE AMONG SUID CASES, WISCONSIN 2015



KEY TAKEAWAY



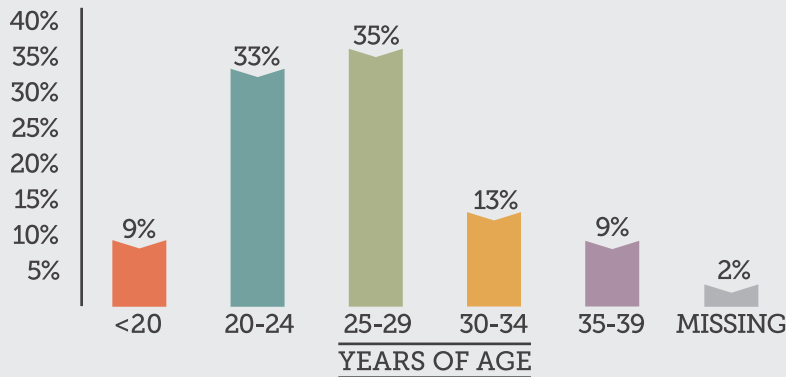
THE RISK OF A SUID WAS FIVE TIMES HIGHER AMONG NON-HISPANIC BLACK INFANTS COMPARED TO NON-HISPANIC WHITE INFANTS. IN 2015, 6 IN 10 SUID INFANTS HAD PUBLIC INSURANCE.

KEEPING KIDS ALIVE IN WISCONSIN

Child death review teams attempted to capture maternal age and education level for all SUID cases where the infants were under the care of their biological mother at the time of death (n=46). Mothers of all ages experienced a SUID. The majority (67 percent) of mothers were in 1 of 2 age

categories; 20 to 24 years (33 percent) and 25 to 29 years (35 percent). Of note, mothers ages 20 to 24 accounted for 19 percent of 2015 births, but experienced 33 percent of SUID cases.

MATERNAL AGE FOR SUID CASES, WISCONSIN 2015



KEY TAKEAWAY

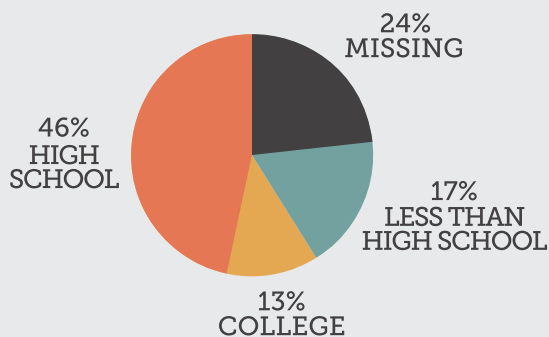


1 IN 3 MOTHERS EXPERIENCING A SUID WERE BETWEEN AGES 20 TO 24. THIS AGE COHORT ACCOUNTED FOR 1 IN 5 BIRTHS IN 2015.

In regard to highest level of education attained, 17 percent of mothers had not completed high school, 46 percent of mothers had high school diplomas or GEDs, and 13 percent

had college degrees (bachelors and postgraduate). The maternal educational attainment level was unknown by the child death review teams in 24 percent of SUID cases.

MATERNAL EDUCATION AMONG SUID CASES, WISCONSIN 2015



KEY TAKEAWAY



A HIGH SCHOOL DIPLOMA OR GED WAS THE HIGHEST LEVEL OF MATERNAL EDUCATION COMPLETED AMONG NEARLY HALF OF THE SUID CASES.

SUID AND THE SLEEP ENVIRONMENT

Each of the SUIDs included in this report occurred when the infant was sleeping or in a sleep environment. In 2016, the American Academy of Pediatrics (AAP) Task Force on Sudden Infant Death Syndrome updated the recommendations for a safe infant sleep environment (AAP, 2016).

The sleep environment and prenatal data available for the infants whose deaths meet the SUID criteria provide an assessment on statewide adherence to the first 10 recommendations listed below. While the 2016 AAP update provides additional guidance on the length of time recommended for room sharing with an infant, the safe sleep recommendations remain aligned with the previous recommendations published in 2011.

Recommendation 1: Back to sleep for every sleep.

Among SUID cases, 77 percent of infants were placed to sleep on their backs. Comparatively 15 percent were placed to sleep on their sides, 6 percent on their stomachs, and one infant's position was not known.

Recommendation 2: Use a firm sleep surface.

In 2015, 30 percent of SUID infants were placed to sleep on a recommended firm surface, including a crib (portable or non-portable), bassinet or play yard. The available data does not allow comment on whether these firm sleep surfaces met the Consumer Product Safety Commission's standards on slat spacing, mattress fit and avoidance of drop sides (AAP, 2016). Importantly, 68 percent of SUID infants were placed to sleep on a surface other than those recommended, including 45 percent of SUID infants placed to sleep in an adult bed. The majority (85 percent) of infants had a safe sleep surface in the home.

Recommendation 3: Breastfeeding is recommended.

Slightly more than half (51 percent) of SUID infants were

breast-fed at some time following birth. Although regularity of breastfeeding is not known, 73 percent of caregivers reported formula as the infant's last meal.

Recommendation 4: It is recommended that infants sleep in the parents' room, close to the parents' bed, but on a separate surface designed for infants, ideally for the first year of life, but at least for the first 6 months.

Among the SUID infants, 4 percent were sharing a room, but not a sleep surface with their caregivers. 43 percent of SUID infants were sleeping with another person at the time of incident. 49 percent were not sharing a sleep surface or room with their caregiver(s). This includes infants placed to sleep at a time the caregivers were not sleeping.

Recommendation 5: Keep soft objects and loose bedding away from the infant's sleep area to reduce the risk of SIDS, suffocation, entrapment and strangulation.

In 2015, 13 percent of SUID infants were placed to sleep in an environment with no soft or loose objects. On average, the infant sleep surfaces among the SUID cohort contained two soft or loose objects. Blankets/sheets (58 percent), comforters/quilts (53 percent) and pillows (53 percent) were the most common soft or loose objects in the infant's sleep environment.

Recommendation 6: Consider offering a pacifier at naptime and bedtime.

Introduction of a pacifier is recommended once breastfeeding is established; typically two to three weeks following birth (Moon, 2017). Among the 44 SUID infants older than age 28 days, 32 percent were given a pacifier when placed to sleep. Pacifier use was unknown in 14 percent of SUID infants older than 28 days.

Recommendation 7: Avoid smoke exposure during pregnancy and after birth.

Among SUID cases, 30 percent of infants were not exposed to smoke in either the pre or postnatal periods. Of note, 60 percent of SUID infants were exposed to smoke prenatally and/or secondhand smoke

following birth with 34 percent of SUID infants exposed in both the pre and postnatal periods. The exposure history of four infants was unknown.

Recommendation 8: Avoid alcohol and illicit drug use during pregnancy and after birth. The majority of SUID infants were not exposed to illicit drugs (68 percent) or heavy alcohol use (79 percent). Importantly, the illicit drug exposure was unknown among an additional 17 percent of SUID infants and heavy alcohol use was unknown among 21 percent of SUID infants. 15 percent of SUID infants were exposed to drug or heavy alcohol use during pregnancy and 11 percent of caregivers were impaired by drugs or alcohol at the time of the incident leading to the SUID.

Recommendation 9: Avoid overheating and head covering in infants. The majority, 80 percent, of SUID infants were known to not be overheated at the time of incident. Whether or not the infant was overheated was not known in seven instances. Only 4 percent of infants were known to be overheated at the time of the incident leading to the SUID.

Recommendation 10: Pregnant women should obtain regular prenatal care. Among SUID cases, 85 percent of women experiencing a SUID received at least one prenatal care visit. The median number of prenatal visits was 10 and the median time prenatal care began was two months. The count of prenatal visits was unknown among 10 infant SUIDs and the month of prenatal care initiation was unknown for one infant.

Conclusion

In more than 85 percent of SUID cases, three or more AAP safe sleep recommendations were not met. Use of a firm sleep surface and removal of soft and loose objects offer the greatest opportunities for increasing sleep environment safety.

REFERENCES

- American Academy of Pediatrics Task Force on Sudden Infant Death Syndrome. (2016). SIDS and other sleep-related infant deaths: Updated 2016 recommendations for a safe infant sleeping environment. *Pediatrics*. 138(5):e20162938.
- Centers for Disease Control and Prevention. (2017). Sudden Unexpected Infant Death and *Sudden Infant Death Syndrome*. Retrieved from <https://www.cdc.gov/sids/aboutsuidandsids.htm>.
- Centers for Disease Control and Prevention. (2017). *Preterm birth*. Retrieved from <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm>.
- Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying cause of death 1999-2015 on CDC WONDER online database, released December, 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Sept. 21, 2017 3:36:27 p.m.
- Moon, R.Y. (2017). *How to Keep Your Sleeping Baby Safe: AAP Policy Explained*. Retrieved from <https://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/A-Parents-Guide-to-Safe-Sleep.aspx>.
- Shapiro-Mendoza C. K., Barfield W. D., Henderson Z., James A., Howse J.L., Iskander J., Thorpe P.G. (2016). CDC grand rounds: Public health strategies to prevent preterm Birth. *Morbidity and Mortality Weekly Report (MMWR)* 65(32):826-30. doi: 10.15585/mmwr.mm6532a4. PubMed PMID: 27536925.
- Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics. Wisconsin Interactive Statistics on Health (WISH) data query system. Accessed at <https://www.dhs.wisconsin.gov/wish/index.htm>, Infant Mortality Module on 10/19/2017.
- Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics. Wisconsin Interactive Statistics on Health (WISH) data query system, <https://www.dhs.wisconsin.gov/wish/index.htm>, Fertility Module, accessed 10/19/2017.

TECHNICAL NOTES

1. For deaths occurring in counties without a child death review team, the death was reviewed as a de-identified case by the Child Death Review State Advisory Council.
2. Infant deaths occurring in the sleep environment with natural causes are not included if the death certificate did not indicate sleep factors as a condition leading to or contributing to the death. This represents a minor variation from the inclusion criteria of previous Children's Health Alliance of Wisconsin SUID reports. The count of cases from ICD-10 codes of R95 (sudden infant death syndrome), R99 (other ill-defined and unspecified causes) and W75 (accidental suffocation and strangulation in bed) statewide was 41 in 2013, 48 in 2014, and 48 in 2015 (CDC NCHS, 2017).



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