

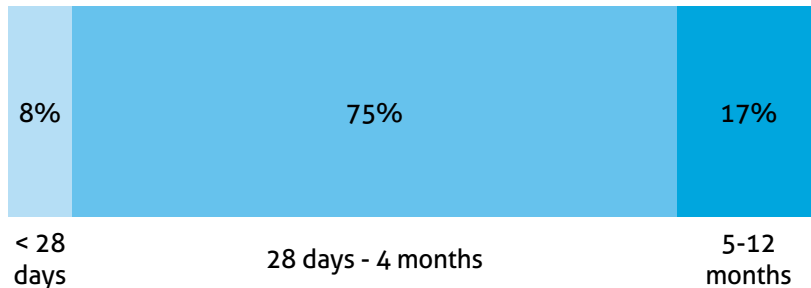
Sleep-related Infant Injury Deaths in New York City, 2012-2015

From 2012 to 2015, injury was the fifth leading cause of death among infants younger than 1 year old in New York City (NYC), accounting for 10% of all infant deaths.¹ Among these injury deaths, 75% were sleep-related. Sleep-related injury deaths are largely preventable, and understanding their cause is a major public health concern. Most of these deaths involved controllable risk factors related to sleep positioning, sleep surface, bed sharing and excessive bedding. To reduce these deaths, the American Academy of Pediatrics (AAP) released updated recommendations for a safe infant sleeping environment in 2016.²

This report includes data from a retrospective review of sleep-related injury deaths among NYC infants in 2012-2015. The report highlights the prevalence of unsafe sleep environmental risk factors. Prevention efforts should include educating families about unsafe sleep risk factors and providing them with resources to avoid or minimize these environmental risk factors. Prevention efforts must also address the root causes of poverty and poor housing conditions- such as heating and pest issues- that can impact safe sleep practices and create disparities in the distribution of risks for sleep-related infant injury deaths. All NYC infants have the right to safe sleeping conditions.

Younger infants are at higher risk of sleep-related injury deaths than older infants

Percentage of sleep-related injury deaths among infants by age group, New York City, 2012-2015



- In 2012-2015, there were 163 sleep-related infant injury deaths in NYC, an average of 41 deaths per year. The rate of sleep-related injury deaths was 33.4 deaths per 100,000 live births.
- In 2012-2015, 83% of sleep-related infant injury deaths occurred among infants younger than four months. Younger infants are at higher risk of sleep-related injury death than older infants because they do not yet have the motor ability and muscle strength to move their head to escape potential threats of suffocation.³

Sources: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner, 2012-2015

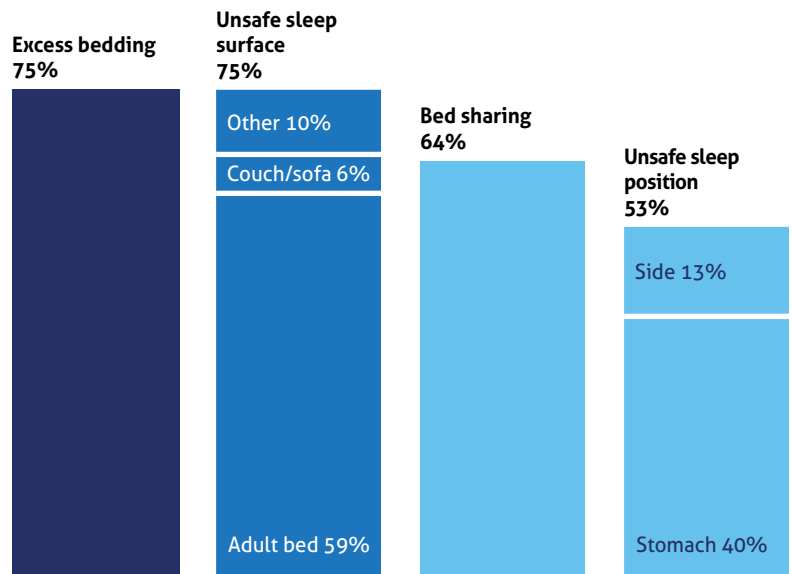
Data sources:

The New York City Department of Health and Mental Hygiene (DOHMH) Bureau of Vital Statistics birth and death data, 2012-2015 and The Office of the Chief Medical Examiner (OCME) database, 2012-2015 were reviewed for deaths of select injury causes from the following ICD-10 codes: W75, W84 (suffocation injuries) and Y33, Y34 (injuries of undetermined cause and intent). All infant and mothers' demographic information was obtained from infant birth certificates. All sleep environmental risk factors were abstracted from the OCME database, which includes autopsy, external examination reports, toxicology and other postmortem special studies, police reports and hospital reports. Clinical and research staff from the Health Department's Bureau of Maternal, Infant and Reproductive Health conducted an in-depth review of all deaths of select injury causes to determine which were sleep-related.

Excess bedding and unsafe sleep surface are two major environmental risk factors

- Four environmental factors that increase the risk of a sleep-related infant injury death are sleep positions other than on the infant’s back, sharing a bed with another sleeper, sleeping on an unsafe surface, and excess bedding.
- In 2012-2015, 75% of the 163 sleep related infant injury deaths involved excess bedding.
- During the same period, 75% of sleep-related infant injury deaths involved an unsafe surface, such as an adult bed (59%), couch or sofa (6%), or other (10%), such as a stroller, baby carrier or car seat.
- Of all infants who died from sleep-related injuries, 64% were sharing their bed with one other sleeper.
- Over half (53%) of sleep-related infant deaths involved unsafe sleep positions: infants were placed on their stomach (40%) or side (13%) to sleep, instead of on their back (supine), as recommended by the AAP.

Percentage of sleep-related infant injury deaths by type of environmental risk factor, New York City, 2012-2015



Notes: "Other" unsafe sleep surface includes stroller, baby carrier, car seat, the floor, etc. Deaths may involve more than one environmental risk factor. Sources: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner, 2012-2015

Most sleep-related infant injury deaths involve more than one environmental risk factor

Percentage of sleep-related infant injury deaths by number of environmental risk factors, New York City, 2012-2015



Notes: Risk factors include excess bedding, unsafe sleep surface, bed sharing, and unsafe sleep position. Sources: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner, 2012-2015

- In 2012-2015, most (87%) of the 163 sleep-related infant injury deaths involved more than one unsafe sleep environmental risk factor. Twenty-seven percent involved two risk factors, 40% involved three, and 20% involved all four risk factors.

Definitions:

Sleep-related deaths include both **sudden infant death syndrome (SIDS)** and **sleep-related injury deaths**. Unlike SIDS, sleep-related injury deaths involve unintentional injuries that can be explained and are mostly preventable.

Sleep-related injury deaths, an external cause of death, are classified as infant injury deaths (occurring before <12 months of age) due to select injury causes (eg. accidental suffocation and strangulation in bed, unspecified threat to breathing, undetermined causes). Injuries are considered to be sleep-related if the infant was asleep when last seen alive and if any unsafe environmental factors (e.g., unsafe sleep position, unsafe sleep surface, bed sharing, excess bedding) were present at the time of death and may have contributed to death.

This report does not include deaths caused by SIDS. SIDS is the natural death of an infant that cannot be explained after a careful medical review of the infant’s medical records, a death scene investigation (to rule out environmental causes or unsafe sleep practices), and an autopsy.

Unsafe sleep position refers to any position in which an infant is not placed on the back to sleep (e.g., on their stomach or side).

Unsafe sleep surfaces include adult beds, couches, sofas, and other surfaces (e.g., strollers, baby carriers, car seats, floors, etc.).

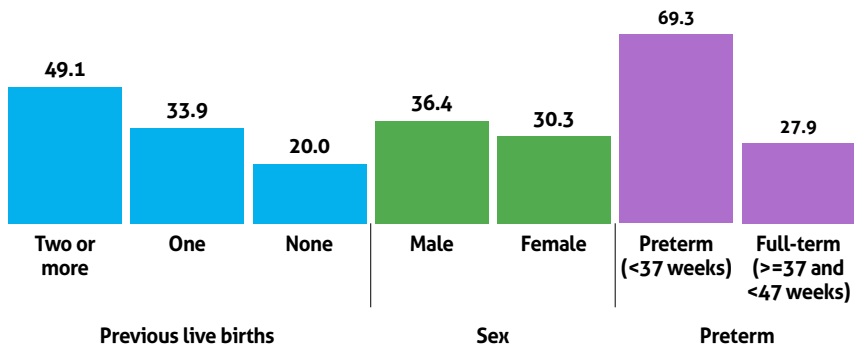
Excess bedding is defined by the AAP’s 2016 safe sleep guidelines as having anything other than a sleep sack and one fitted bed sheet in the infant’s sleep environment. Examples of excess bedding include any blanket, loose bedding, pillows, comforters, quilts, crib bumpers and stuffed animals.

Mother’s race/ethnicity: For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the birth certificate, regardless of reported race; people reporting ancestry from non-Spanish speaking Central or South American countries and non-Spanish speaking Caribbean islands are considered to be non-Latino/a and are categorized based on their selected race category. Black, White, and Asian/Pacific Islander race categories exclude people of Latino/a origin.

Disparities in sleep-related infant death rates are seen across birth, infant and mother characteristics

Sleep-related infant injury death rates by birth and infant characteristics, New York City, 2012-2015

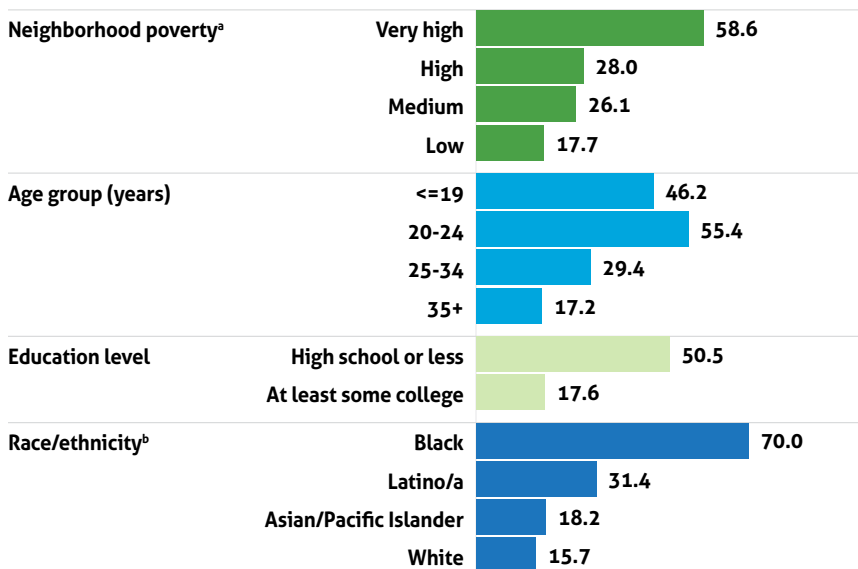
Rates per 100,000 live births



Sources: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner, 2012-2015

Sleep-related infant injury death rates by maternal characteristics, New York City, 2012-2015

Rates per 100,000 live births



^a Neighborhood poverty is based on census tract, defined as the percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2011-2015. Low poverty: <10% of residents below FPL; medium: 10 to <20%; high: 20 to <30%; very high poverty: ≥30% of residents below FPL.

^b Mother's race/ethnicity: Latino/a includes people of Hispanic origin based on ancestry reported on the birth certificate, regardless of reported race. Black, White, and Asian/Pacific Islander race categories exclude people of Latino/a origin.

Sources: NYC DOHMH Bureau of Vital Statistics and NYC Office of Chief Medical Examiner, 2012-2015

- Infants whose mothers had two or more previous live births had a higher sleep related injury death rate compared with mothers who did not have a previous live birth (49.1 vs. 20.5 per 100,000 live births).
- The rate of sleep-related injury deaths was more than 2.5 times higher among preterm infants than among full-term infants (69.3 vs. 27.9 deaths per 100,000 live births).
- The rate among infants whose mothers lived in very high-poverty neighborhoods was more than three times the rate among infants whose mothers lived in low-poverty neighborhoods (58.6 vs. 17.7 deaths per 100,000 live births).
- Infants born to mothers who were 20 to 24 years old had a higher sleep-related infant death rate compared with those with mothers who were 25 to 34 years and 35 years and older.
- The sleep-related injury death rate was higher among infants whose mothers had a high school degree or less, compared with mothers who had at least some college (50.5 vs. 17.6 deaths per 100,000 live births).
- Infants whose mothers were Black had the highest sleep-related injury death rate, more than two times higher than Latino/a mothers and nearly four times higher than Asian/Pacific Islander and White mothers.

Recommendations

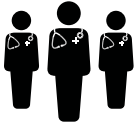


Key AAP Recommendations for a Safe Infant Sleeping Environment:²

- Place babies on their back to sleep every time.
- Use a firm sleep surface.
- Keep soft objects and loose bedding away from the infant's sleep area.
- Share a room with the infant but place the baby on a separate sleep surface.
- Avoid smoke exposure during pregnancy and after birth.
- Avoid covering the infant's head or overheating the infant.
- Avoid alcohol and illicit drug use during pregnancy and after birth.
- Pregnant women should seek and obtain regular prenatal care.
- Breastfeed your infant.

Did you know?

By law, New York State (NYS) maternity facilities are required to provide safe sleep education to new parents, screen them for the need of a crib, and provide them with information about where to get a crib, if necessary. (NYS Public Health Laws [A7181/55100](#) and [A356/S6730](#))



Health and Social Service Providers Should:

- **Make sure your workplace models the latest AAP safe sleep recommendations.** Review your policies, practices, and educational materials to ensure they are consistent with AAP guidelines. Require that all staff receive regular safe sleep training. Become a [Cribs for Kids Certified Hospital](#) to demonstrate your commitment to infant sleep safety.
- **Support parents and caregivers in learning about safe sleep practices at every opportunity.** Educate them during pregnancy, at the hospital stay, prior to hospital discharge, and at well-baby visits. Display a model crib to engage people in a cooperative dialogue. For more information, visit nyc.gov/safesleep or call **311**.
- **Explain why safe sleep practices are important.** Many people know they should place their babies to sleep on their backs, but don't understand why. They may also underestimate the risks of bed sharing and soft bedding.
- **Provide extra support to caretakers of preterm infants.** Educate them on *why* sleep practices in the NICU may differ in the mother-baby unit, well baby nursery, and at home. Promote and model the supine (back) position for sleep for preterm infants when they are medically stable, and before the time of discharge.
- **Refer parents and caregivers to 311 for resources.** People may use loose or heavy blankets or share a bed with their baby because they cannot afford a crib, have insufficient heat or have pest infestations in their home. If a parent or caregiver does not have these essential resources, encourage them to call **311** for help.
- **Engage communities in your work.** Reach out to the communities you serve to learn about their beliefs, knowledge, attitudes and practices related to infant sleep, and partner with them to develop and spread culturally-appropriate messages, campaigns and materials. Include parents, grandparents, siblings, local WIC centers, childcare providers, community- and faith-based organizations, and other trusted sources of information.



Governments, Advocates and Policy Makers Should:

- **Promote programs and policies that empower people to adopt safe sleep practices.** Home visiting programs such as the [Newborn Home Visiting Program](#), [Nurse-Family Partnership](#) and [Healthy Start Brooklyn](#) provide safe sleep education and cribs to people in need.
- **Partner with WIC centers and Medicaid providers.** Promote breastfeeding and safe sleep through WIC peer counselors. Advocate for incentive programs that promote prenatal care and safe sleep education, such as the [Cribs for Kids Managed Care Organization](#) program.

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