

**SUDDEN UNEXPECTED INFANT DEATHS IN THE COUNTY OF SANTA CLARA,
CALIFORNIA WITH EMPHASIS ON UNSAFE SLEEPING ENVIRONMENTS**

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Learning objective: *To present data gathered by the Child Death Review Team (CDRT) in Santa Clara County which shows a marked reduction in cases rendered as Sudden Infant Death Syndrome (SIDS) in the past 5 years. In contrast, the county is seeing a surge of infants who are dying in unsafe sleeping environments to include: co-sleeping with family members in adult sized beds; sleeping on unsafe objects such as ‘boppy’ pillows and couches; wedging phenomenon; and suffocating in cribs/playpens containing abundant soft bedding articles. These deaths are becoming more recognized within this county with the institution of thorough scene investigation and baby-doll re-enactments. This paper will also help provide a useful framework for the forensic community in working up sudden infant deaths.*

Sudden infant Death Syndrome (SIDS) is defined as sudden unexplained death in an infant older than 1 month of age and less than 1 year of age, with peak death rates occurring at approximately 3-4 months of age. SIDS should be reserved as a diagnosis of exclusion when a complete autopsy examination including toxicology fails to disclose a disease entity or circumstance that would explain death. At the Santa Clara County Medical Examiner/Coroner Office, our investigators utilize the state’s SIDS protocol along with a thorough scene investigation. Over the past two (2) years, this office has been vigilant in having a Medical Examiner accompany the Investigator to the scene and perform a baby-doll re-enactment with the parents/caretakers. At the time of autopsy, our standard protocol for sudden infant deaths includes complete body X-rays, postmortem anaerobic and aerobic blood cultures, postmortem virology cultures, vitreous electrolyte analysis, cerebrospinal fluid culture, tissue cultures if warranted, an expanded toxicology analysis, full autopsy examination to include brain and spinal cord, microscopic examination of the organs, and review of the metabolic newborn screen.

In Santa Clara County, in order to consider a diagnosis of SIDS, the infant needs to be found unresponsive *alone in a crib/bassinet* with minimal soft bedding, and upon completion of the aforementioned full infant death protocol there must be no explainable cause for the sudden demise of the infant. However, over the past 5 years, this office has not rendered a single SIDS

case and we believe this is best explained by a thorough scene investigation and baby doll re-enactment, examples of which will be given, which have allowed us to identify infants whose deaths have resulted from unsafe sleeping environments.

As of January 2011, the Child Death Review Team in conjunction with the Medical Examiner's Office has declared a total of thirty-eight (38) infant deaths as being the direct result of unsafe infant sleeping environments. Scenarios include co-sleeping with an infant leading to overlay, wedging in between furniture, placing infants in a prone sleeping position, or using inappropriate bedding such as pillows and 'boppy' pillows, heavy covers, and soft fleece blankets. Of the 38 cases identified, the infant age ranged from 4 days old to 31 months old, although the majority of the deaths occurred in the 3.8-4.0 month range. These deaths for the most part affect all socioeconomic status and races, but our data shows a small preponderance of deaths occurring in homes of single/divorced, young, non-working mothers. Of the 38 cases, the cause of death was attributed to suffocation because of entrapment in soft bedding or pillows or wedging in between furniture in eight (8) cases, overlay in five (5) cases, and undetermined causes in twenty-five (25) cases. We render deaths as undetermined when a parent or caretaker does not admit to overlay but the scene suggests otherwise, and in those cases when other confounding factors are present but an exact cause of death remains difficult to pinpoint.

Our goal as a county is to present these data on a national level and collect more data from agencies across the country to gain a better perspective of this problem. We are using this information to educate caregivers of infants about the importance of providing a safe sleep environment to newborns and infants.

In summary, over the past 5 years, the Santa Clara County Medical Examiner-Coroner office has seen a rise in infant deaths attributed to unsafe sleeping environments. By offering a standardized approach to investigate infant deaths, we hope to better understand a most disturbing and evolving statistic affecting our communities.