

Sudden Infant Death Syndrome

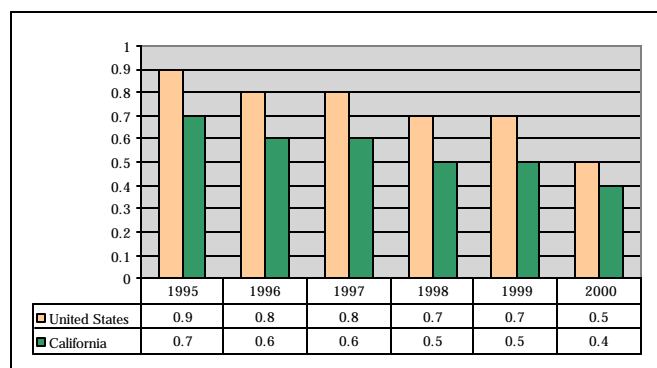
in Sacramento County, 1995 - 2001

Sudden Infant Death Syndrome (SIDS) is the most common cause of death for postneonatal infants (age 28 days to 1 year) in the United States. SIDS is defined as the sudden death of an infant under 1 year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history.

SIDS has declined dramatically since 1995, following the “Back to Sleep” campaign that began in 1994. In this campaign parents were advised to put their babies on their backs to sleep. Following this campaign, the SIDS death rate for the United States declined 55.6 percent, from 0.9 SIDS deaths per 1,000 live births to 0.5 per 1,000 live births, and the SIDS death rate for California declined 57.1 percent, from 0.7 SIDS deaths per 1,000 live births to 0.4 per 1,000 live births (Figure 1).

From 1995 through 2001, there were 129 SIDS deaths in Sacramento County (Table 1). This number is the result of a case review of SIDS cases at the Sacramento County Coroner’s Office. Cases for review were identified using an initial, probable or

Figure 1: 1995-2001 SIDS Death Rates per 1,000 Live Births, United States and California



final cause of death of SIDS as classified by the Coroner’s Office. This number differs from the numbers of SIDS deaths reported from the California Department of Health Services and the Sacramento County Child Death Review Team. This difference is mostly due to reporting issues, amendments to initial cause of death, and death classification issues. The data analysis provided in this report uses the information obtained from the files of the Coroner’s Office as they provide the true count of SIDS cases in Sacramento County.

Table 1: 1995-2001 Number of SIDS Cases by Year, Sacramento County

1995	1996	1997	1998	1999	2000	2001	Total
19	23	17	16	16	19	19	129

Because calculating rates based upon less than 20 cases is unreliable, three year rolling averages are used to analyze Sacramento County SIDS data (Table 2). Three year rolling averages provide a better estimate of the pattern of changes in SIDS deaths in Sacramento County over time.

Table 2: 1995-2001 SIDS Death Rates by Three Year Rolling Averages, Sacramento County

Year	Rate per 1,000 Live Births
1995-1997	1.10
1996-1998	1.07
1997-1999	0.96
1998-2000	0.99
1999-2001	1.02

Overall, since 1995, the SIDS rate in Sacramento County has decreased by 6.9 percent. After the SIDS rate initially decreased to a low during 1997-1999 of 0.96 per 1,000 live births, the rate has increased since then to a current rate of 1.02 per 1,000 live births (Table 2). The current rate is more than twice that of the United States and California.

DISPARITIES IN SIDS DEATHS

The rates of SIDS deaths among the different racial and ethnic groups in Sacramento County show a significant disparity among African American infants. Table 2 compares the proportion of all births by race and ethnicity to the proportion of all SIDS deaths by race and ethnicity from 1995 through 2001. Caucasians are evenly represented in both the proportion of births and SIDS cases, with 51 percent of each. African Americans are over-represented with 12 percent of births and 28 percent of SIDS cases. Hispanics are under-represented with 22 percent of births and 15 percent of SIDS cases. Asian/Pacific Islanders are also under-represented, with 14 percent of births and 2 percent of SIDS cases. Native American and Other SIDS deaths do not provide enough information for analysis.

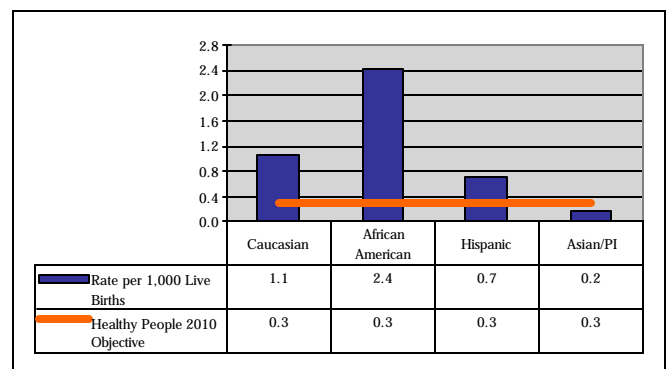
Table 2: 1995-2001 Proportion of Total Births and SIDS Cases by Race and Ethnicity, Sacramento County

Race/Ethnicity	% Cum Births	% Cum SIDS
Caucasian	51	51
African American	12	28
Hispanic	22	15
Asian/PI	14	2
Native American	1	2
Other	<1	2

When the SIDS cause-specific death rates are calculated for each race and ethnic group, the disparity is even more obvious. Figure 4 shows that the overall (1995-2001) African American SIDS death rate of 2.4 per 1,000 live births is the highest SIDS death rate among all race and ethnicities, and is 2.4 times higher than the overall Sacramento County SIDS death rate of 1.0 per 1,000 live births.

The Healthy People 2010 SIDS objective is to have no more than 3 deaths per 10,000 live births, or a rate of 0.3 deaths per 1,000 live births. Sacramento County's overall rate from 1995 to 2001 of 1.0 per 1,000 live births was more than 3 times higher than this objective. The SIDS death rate for African American infants for the same time period was 8 times higher than this objective.

Figure 4: 1995-2001 SIDS Death Rates per 1,000 Live Births by Race and Ethnicity with Healthy People 2010 Objective Detail, Sacramento County



CASE REVIEW FINDINGS

Several health indicators and risk factors associated with higher incidences of SIDS were looked at during the case review. A description of the findings is presented below:

- *Infant's age at time of death.* The majority of infants who died from SIDS were between 2 and 4 months of age. This mirrors state and national trends.

- *Gestational Age and Birthweight.* The majority of the infants who died from SIDS were full-term (37 or more weeks gestation) and were of normal weight (greater than 2500 grams). This follows state and national trends.
- *Gender of Infant.* Surprisingly, 67 percent of the infants who died from SIDS were males. This finding was confirmed when gender was analyzed by race and ethnicity.
- *Seasonality of SIDS Cases:* The majority of SIDS cases in Sacramento County occur during the winter months; this follows state and national trends.
- *Breastfeeding Status.* Thirty-seven percent of the infants had ever been breastfed. A study done in 1999 by the California Department of Health Services estimates that 75 percent of all mothers in Sacramento County breastfeed their babies.
- *Maternal Age.* The range of ages for mothers was 16 to 37, with the majority occurring between 20 and 29. This corresponds with the maternal ages reported in Sacramento County's overall birth data.
- *Prenatal Care.* Sixty-three percent of cases reported having at least 10 prenatal care visits. This corresponds with the majority of mothers in Sacramento County.
- *Perinatal Substance Use Exposure.* When data was collected for this indicator, thirty percent were found to have been exposed prenatally to alcohol, tobacco and other drugs. However, because data for the remaining cases was either self-reported or not collected, inferences cannot be drawn from this data.
- *Geographical location of SIDS cases.* The locations of the residences of the infants who died from SIDS were mapped using GIS mapping systems. The resultant map showed that there was no clustering of SIDS cases, and that the frequency of SIDS deaths by zip code corresponded with the number of births in that location.

Information was also collected regarding the infant's exposure to secondhand smoke, sleeping location and sleeping position. Because these risk factors have been highly associated with increasing the risk of

SIDS, the analysis of these factors will each be discussed separately.

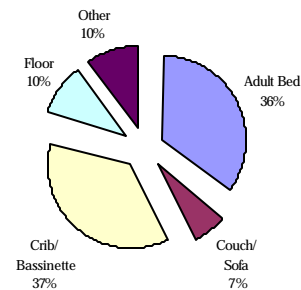
Secondhand Smoke Exposure

Secondhand tobacco smoke exposure is the most significant substance exposure associated with SIDS deaths. In this case review, 40 percent (n=52) of cases were exposed to secondhand smoke. Of these, almost 50 percent (n=25) also reported alcohol, tobacco or other drug use during pregnancy. The remaining 27 cases were exposed to secondhand smoke only during infancy. The data regarding secondhand smoke is not specific to who was smoking in the household, but merely that there was a smoker in the household.

Sleeping Location

Sleeping in a non-infant bed and/or on a non-infant mattress also increases the risk of SIDS. Of the 129 SIDS cases, only 37.2 percent (n=48) of the infants were sleeping in a crib or bassinette at the time of their death (Figure 9).

Figure 9: 1995-2001 Number of SIDS Cases by Reported Sleeping Location, Sacramento County



Sleeping Position

Of all the risk factors associated with SIDS cases, sleeping position is the most important. Putting the baby on his or her back to sleep has been *proven* to reduce the risk of SIDS. In spite of the proven

benefit of putting babies to sleep on their backs, many babies are still put to sleep on their sides or stomachs. In this case review, the data collected is more detailed about the position the baby was found rather than the position in which the baby was put to sleep. Because the parent or care-taker is under extreme emotional distress after losing a baby, it is hard to remember what position the infant was placed. As a result, many cases (38.8 percent) the position in which the infant was put to sleep is unknown. Of the 129 SIDS cases reported in Sacramento County from 1995-2001, 28.6 percent of babies were found on their backs at the time of death. Almost fifty-six percent of the time, the infant was found on his or her stomach.

CONCLUSIONS

- The current SIDS death rate for Sacramento County is 1.02 per 1,000 live births; for the United States it is 0.5 per 1,000 live births; and for California it is 0.4 per 1,000 live births.
- From 1995-2001, the overall rate of SIDS in Sacramento County decreased only 6.9 percent, compared to a nationwide decrease of 55.6 percent and a statewide decrease of 57.1 percent.
- African Americans have the greatest disparity with regards to SIDS deaths in Sacramento County. The overall rate from 1995-2001 was 2.4 times higher than Sacramento County’s overall rate.
- The data collected from this review also shows that only 2 cases had no risk factors present at the time of death.
- Eighty-six percent of SIDS cases had two or more risk factors present at the time of death.
- The risk factors most often reported were: sleeping location, sleeping position and exposure to second-hand smoke - the same ones proven to increase the risk of SIDS.

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Jim Hunt **Glennah Trochet, MD**
Director County Health Officer

Disease Control and Epidemiology Unit
(916) 875-5881 telephone – (916) 875-5888 fax

Prepared by Nolana Mymka, MPH
Cassius Lockett, PhD
Glennah Trochet, MD

