Sudden Infant Death Syndrome (SIDS) is the leading cause of death among infants beyond the neonatal period (between the ages of one month and one year). Most SIDS deaths occur among infants between one and four months old. SIDS mortality rates have declined markedly since 1990 in Los Angeles County (Figure 1) and the U.S. However, SIDS rates are three times higher among African-Americans both locally and nationally. Rates of SIDS in the U.S. are also disparately high among Native Americans.

2. Public Health Information System Death Files, State of California, Department of Health Services, Center for Health Statistics.
Sleeping in the prone position (stomach) was identified as an important modifiable risk factor for SIDS.\textsuperscript{1} As a result, the Back To Sleep campaign was launched in 1994 by leading child health organizations (including the National Institute for Child Health, the U.S. Public Health Service, the American Academy of Pediatrics, and the SIDS Alliance) to encourage parents to place their babies to sleep on their backs. Since its inception, the rate of infant mortality due to SIDS in the U.S. has declined by 15%.\textsuperscript{4} In addition to sleeping position, other modifiable factors are associated with SIDS. These include exposure to tobacco smoke in utero (maternal smoking during pregnancy elevates the risk of SIDS threefold), and exposure to environmental tobacco smoke in the home, which doubles the risk for SIDS\textsuperscript{5} (see Sidebar on page 6 for actions to lower the risk of SIDS).

This report presents findings from the 1999–2000 Los Angeles County Health Survey on infant sleeping position. The results are based on information provided by parents (or legal guardians) on a random countywide sample of 2,174 children birth through five years of age. Parents were asked in what sleeping position they placed their children from birth to six months of age (back, stomach, or side).

\footnotesize{\textsuperscript{4} Findings presented at the annual Society for Pediatrics meeting, Washington, D.C., May 5, 1997.}

\footnotesize{\textsuperscript{5} Dwyer, T., Ponsonby, A., & Couper, D. (1999) Tobacco Smoke Exposure at One Month of Age & Subsequent Risk of SIDS - A Prospective Study. American Journal of Epidemiology, 149(7), 593-602.}
Results

- 10% of parents in Los Angeles County reported that they placed their infants to sleep on their stomachs, while the remaining 90% indicated placing their infants to sleep on their backs or sides (Table 1).

- 30% of African-American infants were placed to sleep on their stomachs compared to 13%* of Asian/Pacific Islander infants, 11% of White infants, and 7% of Latino infants (Figure 2).

- The percentage of infants placed to sleep on their stomachs did not vary significantly by their parents’ education level [less than high school (8%), high school graduate (11%), some college/trade school (13%), or college graduate/post graduate degree (13%)].

- African-American parents were more likely to place their infants to sleep on their stomachs regardless of education level and regardless of the current age of their children.*

- The percentage of infants placed to sleep on their stomachs did not vary significantly by their parents’ household income. (Table 1).

- In the County’s eight Service Planning Areas (SPAs), the percentage of infants placed to sleep on their stomachs ranged from 8%* in SPA 4 (Metro) to 15% in SPA 8 (South Bay) (Table 1).

* Estimate based on small sample size (n<30) and should be viewed with caution.

Source: Los Angeles County Health Survey
The percentage of infants placed to sleep on their stomachs by year of birth decreased from 12% of those infants born in 1994 to 8%* of those born in 1999 (Figure 3). However, these changes were not statistically significant.

### Table 1. Percentage of Infants Placed to Sleep on Their Stomachs by Selected Characteristics, Los Angeles County, 1999–2000

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
<th>±95% CI</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles County</td>
<td>10%</td>
<td>±1</td>
<td>110,000</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>7%</td>
<td>±1</td>
<td>47,000</td>
</tr>
<tr>
<td>White</td>
<td>11%</td>
<td>±3</td>
<td>21,000</td>
</tr>
<tr>
<td>African-American</td>
<td>30%</td>
<td>±7</td>
<td>29,000</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>13%*</td>
<td>±6</td>
<td>12,000</td>
</tr>
<tr>
<td><strong>Federal Poverty Level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 100% FPL</td>
<td>9%</td>
<td>±2</td>
<td>33,000</td>
</tr>
<tr>
<td>100% to &lt; 200% FPL</td>
<td>12%</td>
<td>±2</td>
<td>37,000</td>
</tr>
<tr>
<td>200% to &lt; 300% FPL</td>
<td>11%</td>
<td>±3</td>
<td>21,000</td>
</tr>
<tr>
<td>300% FPL or More</td>
<td>10%</td>
<td>±3</td>
<td>19,000</td>
</tr>
<tr>
<td><strong>SPA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antelope Valley</td>
<td>9%*</td>
<td>±6</td>
<td>3,000</td>
</tr>
<tr>
<td>San Fernando</td>
<td>9%</td>
<td>±3</td>
<td>17,000</td>
</tr>
<tr>
<td>San Gabriel</td>
<td>10%</td>
<td>±3</td>
<td>20,000</td>
</tr>
<tr>
<td>Metro</td>
<td>8%*</td>
<td>±3</td>
<td>10,000</td>
</tr>
<tr>
<td>West</td>
<td>13%*</td>
<td>±6</td>
<td>6,000</td>
</tr>
<tr>
<td>South</td>
<td>11%</td>
<td>±4</td>
<td>16,000</td>
</tr>
<tr>
<td>East</td>
<td>9%</td>
<td>±3</td>
<td>15,000</td>
</tr>
<tr>
<td>South Bay</td>
<td>15%</td>
<td>±4</td>
<td>24,000</td>
</tr>
</tbody>
</table>

* Estimate based on small sample size (n<30) and should be viewed with caution.

Source: Los Angeles County Health Survey
Discussion

Results from the Los Angeles County Health Survey show that one-in-ten infants are being placed to sleep on their stomachs, a practice that is declining locally and nationally. However, African-American parents were three times more likely than other ethnic groups to place their infants to sleep on their stomachs. In addition, African-Americans experience higher rates of low birth weight and late prenatal care, and lower rates of breastfeeding.6 These findings highlight the importance of delivering the Back to Sleep message to all parents, especially to African-American parents, as part of comprehensive initiatives to improve prenatal care and infant health.

The occurrence of SIDS in Los Angeles County is relatively rare, and has declined markedly over the past decade. The American Academy of Pediatrics suggests four likely hypotheses to explain why SIDS is more likely to occur in those infants who are placed on their stomachs. These include airway obstruction, re-breathing, thermal stress, and reduced cerebral blood flow. Although placing infants to sleep on their backs will not prevent all cases of SIDS, it would likely reduce SIDS rates in all racial/ethnic groups.

The Department of Health Services (DHS) works to improve health outcomes among all infants through the Maternal, Child, and Adolescent Health Program (see Sidebar at right). In addition, DHS also strives to reduce smoking rates among the county’s population (an estimated 6% of young children ages 0 to 5 are regularly exposed to tobacco smoke at home7). This is important for reducing the rates of SIDS, as well as improving other smoking-related health outcomes in adults and children.

These findings are subject to at least four limitations. First, data on infant sleep position were based on parent recollection of behavior when their children were infants. Parents of older children may not have accurately remembered the sleeping position of their child several years ago. Second, parents may have given responses that they perceived to be socially desirable, based on their prior knowledge of the Back to Sleep campaign. Since data on infant sleep position are not routinely collected at the national or state level, comparisons to other cities or states are difficult to make. Third, the sample size of Native American parents was too small to provide any reliable information for this important risk group. Finally, because the survey was limited to households with telephones, information was not collected on a segment of the population that may be at increased risk of SIDS.

The Healthy People 2010 objectives include national objectives to reduce and prevent infant mortality from SIDS, and to increase the percentage of healthy, full-term infants who are placed to sleep on their backs.8 Local initiatives targeted to African-Americans would

---

achieve progress toward these objectives by reducing disparities, and improving health outcomes among their infants. In addition, given the elevated rates of SIDS mortality among Native American infants nationally, local efforts should also target this group. All efforts need to be comprehensive, and include support services advocating breastfeeding and discouraging maternal smoking. Future surveys planned by the Los Angeles County Department of Health Services will provide further valuable comparison data to assess the effectiveness of efforts towards reducing important risk factors for SIDS.

Acknowledgments

LA Health is a publication of the Office of Health Assessment and Epidemiology, Los Angeles County Department of Health Services, Public Health.

Series Editors: Paul Simon, MD, MPH; Cheryl Wold, MPH; Jonathan Fielding, MD, MPH; and Anna Long, PhD, MPH.

Data Analysts: Isabel Cardenas, MPH; Benedict Lee, PhD; Amy Lightstone, MPH, ATC; Arun Naryanan, MPH; Cynthia Recio; Zhiwei Waley Zeng, MD, MPH

Special thanks to Cynthia Harding, MPH; Margaret Chao, PhD; and J. Robert Bragonier, MD, PhD for their editorial assistance. Thanks also to Janet Allen, RN, BSN, PHN of the California SIDS Program for providing comments.

Funding for the survey was provided by the Los Angeles County Department of Health Services, the California Department of Health Services, the Los Angeles County Medicaid Demonstration Project, and the Los Angeles County Department of Public Social Services.

For more information or to obtain additional copies of this report, call 213-240-7785 or visit our Web site at www.lapublichealth.org/ha.
RESOURCES FOR PARENTS

- California Sudden Infant Death Syndrome Program
  5330 Primrose Drive
  Suite 231
  Fair Oaks, CA 95628-3542
  (800) 369-SIDS
  (916) 536-0146
  (916) 536-0167 fax
  e-mail: sidsprogram@sprintmail.com

- National Sudden Infant Death Syndrome Resource Center (NSRC)
  2070 Chain Bridge Road
  Suite 450
  Vienna, VA 22181
  (703) 821-8955
  http://www.sidscenter.org/

- National Institute of Child Health and Human Development (NICHD)
  Back to Sleep
  31 Center Drive, Room 2A32
  Bethesda, MD 20892-2425
  (800) 505-CRIB
  (301) 496-7101 fax
  http://www.nichd.nih.gov/

- PEDIATRICS (Professional publication of the American Academy of Pediatrics)
  http://www.pediatrics.org/
Summary:

Los Angeles County Health Survey

- Sleeping in the prone (stomach) position is an important risk factor for Sudden Infant Death Syndrome (SIDS).
- SIDS mortality rates have declined markedly since 1990 in Los Angeles County.
- Overall, 10% of infants in Los Angeles County were placed to sleep on their stomachs.

- 30% of African-American infants were placed to sleep on their stomachs compared to 13%* of Asian/Pacific Islander infants, 11% of White infants, and 7% of Latino infants.
- The percentage of infants placed to sleep on their stomachs by year of birth decreased from 12% of those infants born in 1994 to 8%* of those born in 1999.
- It is important to target Back to Sleep messages to African-American parents in Los Angeles County.

* Estimate based on small sample size (n<30) and should be viewed with caution.