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EDUCATION AND RESEARCH UPDATE



sids
SUDDEN INFANT DEATH SERVICES
of illinois, inc.

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A COMPARISON OF PULMONARY INTRA-ALVEOLAR HEMORRHAGE IN CASES OF SUDDEN INFANT DEATH DUE TO SIDS IN A SAFE SLEEP ENVIRONMENT OR TO SUFFOCATION.

Krous H, Haas EA, Masoumi H, Chadwick AE, Stanley C.

Forensic Science Int. Jan 11, 2007

The differentiation of SIDS from accidental or inflicted suffocation may be impossible without corroborating findings from the death scene or autopsy, or in the absence of a confession from a perpetrator. Pulmonary intra-alveolar hemorrhage (PH) has been proposed as a potential clue to suffocation, but none of the previous studies on this topic have limited SIDS cases to those who were in a safe sleep environment, in which all were found supine and alone on a firm surface with their heads uncovered. Our aims are to: (1) compare PH in SIDS cases found in a safe sleep environment, to a control group comprised of infants whose deaths were attributed to accidental or inflicted suffocation and (2) assess the effect of age, CPR, and postmortem interval (PMI), with regard to the severity of PH in this subset of safe-sleeping SIDS cases. We conducted a retrospective study of all postneonatal cases accessioned by the Office of the Medical

Examiner in San Diego County, California who died of SIDS or suffocation between 1999 and 2004. A total of 74 cases of sudden infant death caused by SIDS (34 cases as defined above, comprising 8% of the total SIDS cases), accidental suffocation (37), and inflicted suffocation (3) from the San Diego SIDS/SUDC Research Project database were compared using a semi quantitative measure of pulmonary intra-alveolar hemorrhage. The most severe (grade 3 or 4) PH occurred in 35% of deaths attributed to suffocation, but in only 9% of the SIDS cases. Age, duration of CPR attempts and PMI had no effect on the severity of PH in SIDS. Our results indicate that the severity of PH cannot be used independently to differentiate SIDS from suffocation deaths. Each case must be evaluated on its own merits after thorough review of the medical history, circumstances of death, and postmortem findings.

BARRIERS TO FOLLOWING THE SUPINE SLEEP RECOMMENDATION AMONG MOTHERS AT FOUR CENTERS FOR THE WOMEN, INFANTS, AND CHILDREN PROGRAM.

Cohen ER, et al

Pediatrics Vol, 118 No. 2 August 2006

The authors set out to quantify these barriers to infant sleep recommendations, particularly among low-income, primarily black mothers. They conducted face-to-face interviews with 671 mothers, 64% of whom were black, who attended WIC program centers in Boston, Dallas, Los Angeles, and New Haven. The authors found that:

- 59% of mothers reported supine,
- 25% side,
- 15% prone,
- and 1% other as the usual sleep position for their infant.

34% reported that they never placed infants in the prone position for sleep.

72% of the mothers said that a nurse provided the source of advice;

53% said they only received advice from a doctor;

38% said they received advice from a female friend or relative.

On supine sleep position:

- 42% were instructed by a nurse
- 36% were instructed by a doctor
- 15% were instructed by a female friend or relative

When a female friend or relative recommended the prone position for infant sleep, mothers were more

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DEATHS ASSOCIATED WITH PLAYPENS.

SIDS of Illinois promotes the AAP's (American Academy of Pediatrics) recommendations regarding safe sleep surfaces for infants. One of the items that SIDS of Illinois recommends for infant safe sleep is a portable play-yard or playpen. Over the years, play-yards and portable cribs have evolved into nearly identical products. The portable play-yards work well mainly because of their ease of use in multiple settings. We encourage parents who cannot afford a full size 6 year crib to purchase a new portable play-yard from their nearest "Big Box Stores" etc. for under \$50. What new parents and educators must remember is that regardless of where baby sleeps, they need to be reminded to always follow the guidelines for infant safe sleep.

Since 1988, the Consumer Product Safety Commission has received over 200 reports of infants who died while in play-yards. In over half of the cases, soft bedding or inappropriate mattresses were used and the infants died of suffocation or SIDS. While follow-up investigations on many of these deaths led to recalls of certain products, the CPSC also identified hazards that were not necessarily related to the design or construction of the play-yard. These problems included:

- Soft bedding – thick blankets/quilts, stuffed animals, pillows
- Mattresses/cushions – improper use of foam mattresses, couch cushions and other large items like over sized stuffed animals caused infant to be wedged between the item and the wall of the play-yard and subsequent suffocation
- Side rails that collapse resulting in infant being entrapped in the "V" shape created by the 2 sections of the rail
- Older style wooden playpens that have slats too far apart which can then result in a strangulation or suffocation death
- Large mesh on older playpens that can catch buttons on infants clothing and result in strangulation
- Strangulation caused by drapery or mini-blind cords when play-yard placed too close to windows
- Broken or damaged play-yards that have openings that can entrap infants
- Mesh pockets that are created when one side of the play-

yard is left folded down creating a suffocation/entrapment hazard for infants

- Location in which infant died: infants own home, childcare setting, grandparents home or other babysitter home

To prevent accidental deaths due to suffocation and entrapment when using a portable crib/play-yard, parents and caregivers should take the following precautions:

- Always place infant to sleep on his/her back in play-yard with no soft bedding like quilts, stuffed animals, pillows, pillow like toys or sheepskins.
- Set up play-yard carefully before placing infant in it. Make sure sides are locked into place.
- Use only the mattress or padding supplied by the manufacturer. Never use additional mattresses in play-yard.
- Check that play-yard is in good condition. Using a play-yard that is in poor condition or improperly repaired can create potentially fatal hazards.
- When using a mesh sided play-yard, make sure that the holes in the mesh are less than 1/4 inch in size (smaller than the tiny buttons on infant's clothing). There should be no holes anywhere in the mesh.
- Do not use play-yards with "catch points" such as protruding rivets that could catch on infants clothing and cause strangulation. Remove any strings or cords on infant clothing to help prevent strangulation deaths.
- Do not allow more than one infant at a time to sleep in crib or play-yard to prevent deaths due to accidental roll-over.
- If the crib/play-yard is used to store clothing or laundry items, make sure they are removed prior to placing infant in play-yard. Accidental suffocations have occurred in this situation.
- Never allow pets to sleep with infants in crib or play-yard. This can be a potentially fatal situation.
- Do not allow anyone to smoke around infant.
- Keep infant's room temperature moderate; between 68-72 degrees F.
- Always keep infants head and face uncovered during sleep.

GOOD NIGHT, SLEEP TIGHT – HOW MUCH SLEEP DOES BABY NEED?

SIDS of Illinois has been promoting "Safe Sleep for Baby" for a number of years, but how much sleep does baby really need? The American Academy of Pediatrics recommends that infants sleep in the same room with parents as a way to keep a close watch on them. Although sleeping patterns can vary widely, the AAP provides some general guidelines about how much sleep infants and children need.

There is no hard and fast sleep formula for newborns. They sleep between 16 – 20 hours per day, divided fairly equally between daytime and night time. Most infants longest sleep periods are generally about 4-5 hours at a stretch; about how

long they can go between feedings.

At around 3 months of age, an infant averages about 5 hours of sleep during the day and 10 hours at night – with an occasional waking. The majority of infants of this age will sleep through the night, which means 6-8 hours in a row. Between 3-12 months of age, most infants take 2 naps – one in the morning and one in the afternoon.

From 6-12 months of age, infants may nap about 3 hours during the day and sleep about 11 hours at night.

Working 1 (one) eight hour shift in a smoky workplace is equivalent to smoking 16 (sixteen) cigarettes.

— SMOKE FREE ILLINOIS

NICU NURSES' KNOWLEDGE AND DISCHARGE TEACHING RELATED TO INFANT SLEEP POSITION AND RISK OF SIDS.

Aris C, Stevens TP, Lemura C, Lipke B, McMullen S, Cote-Arsenault D,

Consenstein L. Adv Neonatal Care. 2006 Oct

Infants requiring neonatal intensive care are often placed prone during their acute illness. After hospital discharge, the AAP recommends supine sleep position to reduce the risk of SIDS. Little is known about nursing knowledge and practice regarding best sleep positions for infants as they are transitioned from NICU to home. The objective of the study was to explore and describe NICU nurses' knowledge and practice in the NICU, and to determine the content of parental instruction regarding infant sleep position at the time of discharge.

The survey was conducted in 2 phases. In phase 1, a questionnaire was designed and completed by 157 neonatal nurses currently practicing in Level III and IV NICU's in the state of New York. After content analysis of responses and item revisions, a panel of experts reviewed questionnaire items. Phase II involved completion of the final questionnaire by 95 NICU nurses in 4 additional hospitals. The combined results of Phase I and Phase II are reported.

Of 514 questionnaires distributed, 252 (49%) were completed and analyzed. During NICU hospitalization, nurse respondents identified prone position as the best general sleep position for preterm infants (65%) followed by either prone or side-lying (12%). The nurse's assessment of the infants' readiness for

supine sleep position at the time of NICU discharge varied. Most nurses responded that preterm infants were ready to sleep supine anytime (29%), close to discharge (13%), when maintaining their body temperature in an open crib (25%), between 34-36 weeks post menstrual age (PMA) (15%), after 37 weeks PMA (13%), and when the infant's respiratory status was stable (6%). Typical sleep positions chosen for full term infants in the NICU were supine (40%), side or supine (30%), all positions (18%), side (8%), prone or side (3%), and prone (1%). Frequently cited reasons to place full term infants to sleep prone were: reflux (45%), upper airway anomalies (40%), respiratory distress (29%), inconsolability (29%), and to promote development (17%). At NICU discharge, 52% of nurses instructed parents to place their infants in the supine position for sleep. The most common non supine sleep positions recommended by nurses at discharge were either supine or side (38%), and exclusive side positioning (9%). The conclusion is that nearly 95% of respondents identified a non supine sleep position as optimal for hospitalized preterm infants. Further, only 52% of NICU nurses routinely provide discharge instructions that promote supine sleeping positions at home. This study suggests that nursing self reports of discharge teaching practices are inconsistent, and in some cases in direct conflict with the national Back to Sleep recommendations, which emphasize that the supine position is the safest position for healthy full-term and preterm infants after hospital discharge.

RACE/ETHNICITY AND NATIVITY DIFFERENCES IN ALCOHOL AND TOBACCO USE DURING PREGNANCY.

Perreira KM, Cortes, KE. Am J

Public Health, 2006, September

The authors of the study examined race/ethnicity and nativity correlates of prenatal substance use. Using data on a nationally representative cohort of pregnant women in US cities (N=4185), they evaluated the relative importance of socioeconomic status, paternal health behaviors, social support, and maternal stress and health history in explaining variations in prenatal substance use by race/ethnicity and nativity. The results showed that maternal stress and health history appeared to fully explain differences in alcohol use by nativity, but these and other factors could not explain differences in prenatal smoking. For all races/ethnicities, paternal health behaviors were most strongly associated with maternal substance use. Except among black women, socioeconomic background bore little relation to prenatal substance use after adjustment for more proximal risk factors (e.g., paternal and maternal health behaviors). Social support was most protective among Hispanic women. Therefore, it was concluded that foreign-born immigrant women are at equal risk of prenatal alcohol use compared with similarly situated US born women and should not be overlooked in the design of interventions for at-risk women. Furthermore, the inclusion of fathers and the development of social support structures for at risk women can strengthen intervention.

BARRIERS TO FOLLOWING THE SUPINE SLEEP RECOMMENDATION AMONG MOTHERS AT FOUR CENTERS FOR THE WOMEN, INFANTS, AND CHILDREN PROGRAM.

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likely to place their infants in the prone position and less likely to choose supine compared with those who received no advice from friends or relatives.

When a doctor or nurse recommended a nonsupine position, the mothers were less likely to choose supine compared with those who received no advice from a doctor or a nurse. Mothers who trusted the opinion of a doctor or a nurse about infant sleeping position were more likely to place their infants in the supine position.

Half of the mothers believed that infants were more likely to choke when supine, and they were less likely to place their

infants supine. Mothers who believed that infants are more comfortable in the prone position were more likely to place their infants prone for sleep (36%). 29% believed that having their infants sleep with an adult helped to prevent SIDS, and only 43% believed that SIDS is related to sleep position.

The authors identified specific barriers to placing infants in the supine position for sleep (lack of or wrong advice, lack of trust in providers, knowledge and concerns about safety and comfort) for low income, primarily black mothers that should be considered when designing interventions to get more infants onto their back for sleep.



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SUDDEN INFANT DEATH SYNDROME: IS SEROTONIN THE KEY FACTOR?

Excerpted from an article in JAMA, November 2006, by Debra Weese-Mayer, MD)

Neuropathological studies have identified a key role for the serotonin (5-HT) pathways in SIDS. In a study published by JAMA, Paterson et al recognized that 5-HT influences a broad range of breathing, the cardiovascular system, temperature, and the sleep-wake cycle, showing support of the underlying hypothesis that SIDS is the result of 5-HT mediated dysregulation of the ANS (autonomic nervous system).

In the published data from this study, African American infants are one key group that is consistently underrepresented. Despite decreases in the incidence of SIDS in the US due to the Back to Sleep educational programs, the final results from the 2003 National Vital Statistics indicate a SIDS rate of 0.424 per 1000 live births for Caucasian infants but a rate of 1.152 per 1000 live births for African American infants. These data reflect a 2.7 fold higher incidence among African American infants compared with Caucasian infants. Although this limitation of existing studies should not detract from the importance of the results, it suggests a need for expansion of the populations for future neuropathological studies from the primarily Caucasian and Hispanic infants recruited from San Diego to those who succumb to SIDS nationally.

One solution is for medical examiners in regions with more representative ethnicity for SIDS to join forces in providing autopsy specimens for neuropathological researchers. An alternative solution is to encourage development of young neuropathological investigators (particularly in universities serving ethnically diverse populations, including African Americans) to pursue the study of SIDS in their own laboratories. In doing so, the next generation of neuropathological scientists studying SIDS will be secured, and infants more representative of the SIDS population can be included in research studies.

As Paterson et al clearly explain, data on infants in their study were collected after the successful implementation of the Back to Sleep message. Despite the remarkable progress made nationally in compliance with known modifiable risk factors for SIDS, it is discouraging that 65% of the infants who succumbed to SIDS in the study were in the prone or side position. These results emphasize the critical need for reintroduction of the Back to Sleep campaign to educate parents and caretakers of young infants. Alternatively, it may be time to introduce more innovative interventions that focus on the different ethnic groups affected by SIDS.

To read this article in full, please visit www.sidsillinois.org and go to Research.

MISSION STATEMENT

Sudden Infant Death Services of Illinois, Inc. is a not-for-profit organization dedicated to the elimination of Sudden Infant Death Syndrome (SIDS) and other infant deaths, serving the State of Illinois since 1972.

VISION STATEMENT

Sudden Infant Death Services of Illinois, Inc. is a statewide not-for-profit organization dedicated to:

- Supporting family members and others who have been touched by the tragedy of Sudden Infant Death Syndrome (SIDS) or other infant death;
- Educating both the public and professionals about bereavement support and infant mortality reduction;
- Creating community awareness on the subject of SIDS and other infant death; and
- Eliminating SIDS and other infant death through the support and implementation of appropriate research.

TEENAGERS SMOKE TO EASE LABOR.

According to a report from a government minister in the UK, "teenagers smoke to try and reduce the size of their babies, and make delivery less painful".

There is documented evidence that smoking can stunt a baby's growth. It is also known that low birth weight is strongly linked to an increased risk of many other health complications. Studies have shown that women who smoke during pregnancy are three times more likely to have a low birth weight baby, may face up to a 26% increased risk of miscarriage or stillbirth, are at increased risk of premature birth and are at a significantly increased risk for SIDS.

A spokesperson from the Royal College of Midwives said there was no evidence that having a smaller infant reduced the pain of labor. According to the chief executive for the National Childbirth Trust who stated that it showed a worrisome lack of education among young women. She states, "Although smoking does reduce the baby's size, it does have a devastating effect on the baby in lots of other ways. We are bringing up our young women to be very fearful of labor. Labor is a normal process which is hard work and painful for many women, but with the right sort of support and the right care, perfectly doable. It is a real indictment of our education that teenagers are so fearful that they are prepared to do something that is enormously damaging to themselves and to their babies because they think there might be an outside chance that it might make their labor easier, which is largely a myth."

In Illinois, 8 (eight) people die from exposure to secondhand smoke each and every day.

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