

Infant Sleep Practices— Texas, 2009

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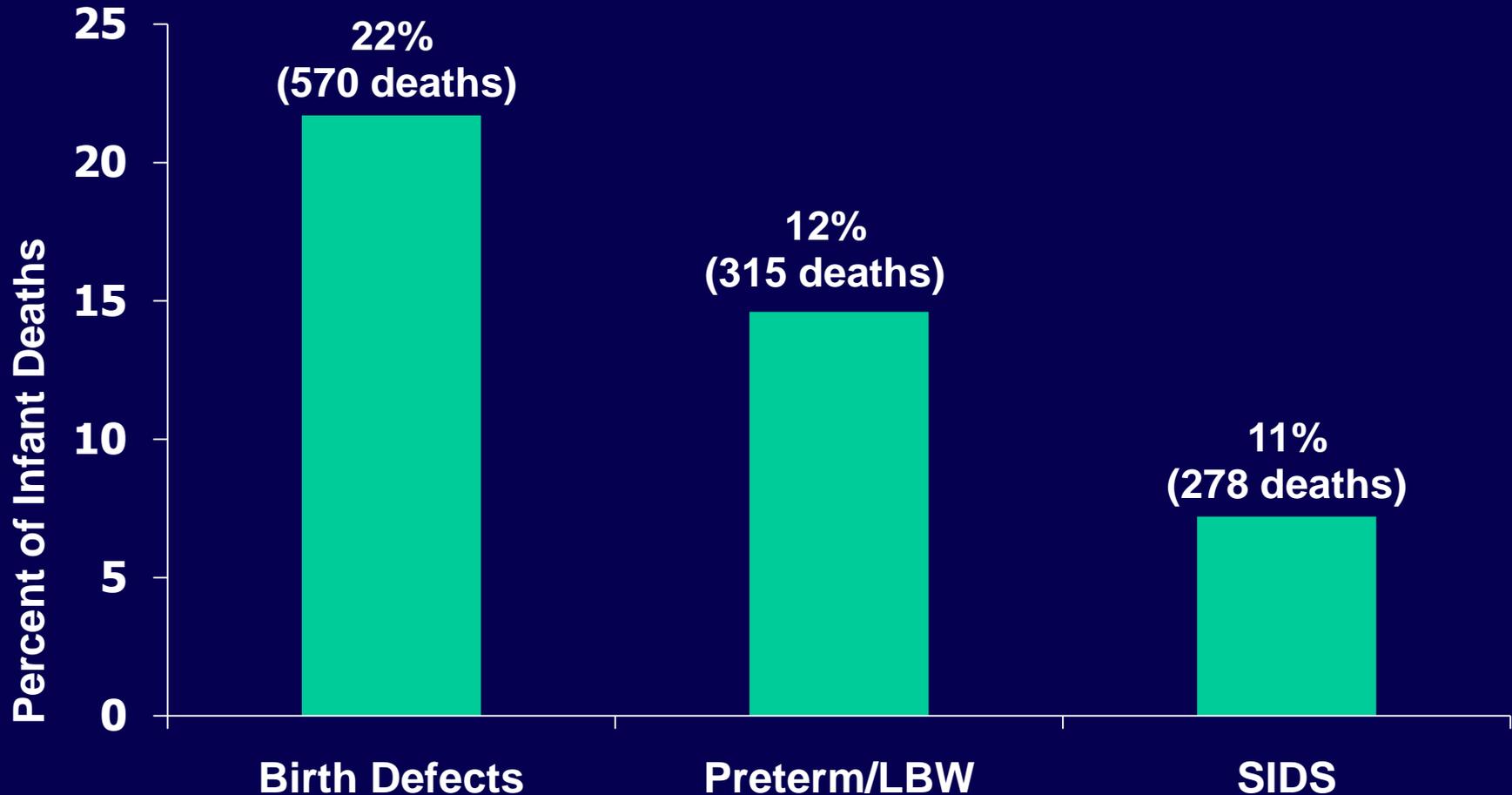
Disclosure

I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider of commercial services discussed in this CME activity.

Objectives

- **Provide background about development of the first Texas Infant Sleep Survey (TISS)**
- **Describe epidemiologic results of the survey, including**
 - **Prevalence of high-risk infant sleep practices**
 - **Differences in these practices by race/ethnicity and socio-economic status (SES)**

Leading Causes of Infant Death in Texas--2007



What is SIDS?

- **Sudden Infant Death Syndrome (SIDS)**
- **Infant death remains unexplained after a thorough investigation, including**
 - **Complete autopsy**
 - **Death scene examination**
 - **Review of clinical history**

Impact of SIDS

- **Third leading cause of infant death**
- **First leading cause of post-neonatal death**
- **Approximately 300 infant deaths in TX**
 - **Over 10% of all infant deaths**

Why does SIDS occur?

- **Triple risk model-most widely recognized explanation for SIDS**

Why does SIDS occur?

- **Triple risk model-most widely recognized explanation for SIDS**
 - 1) **Vulnerable infant: underlying defect or abnormality**

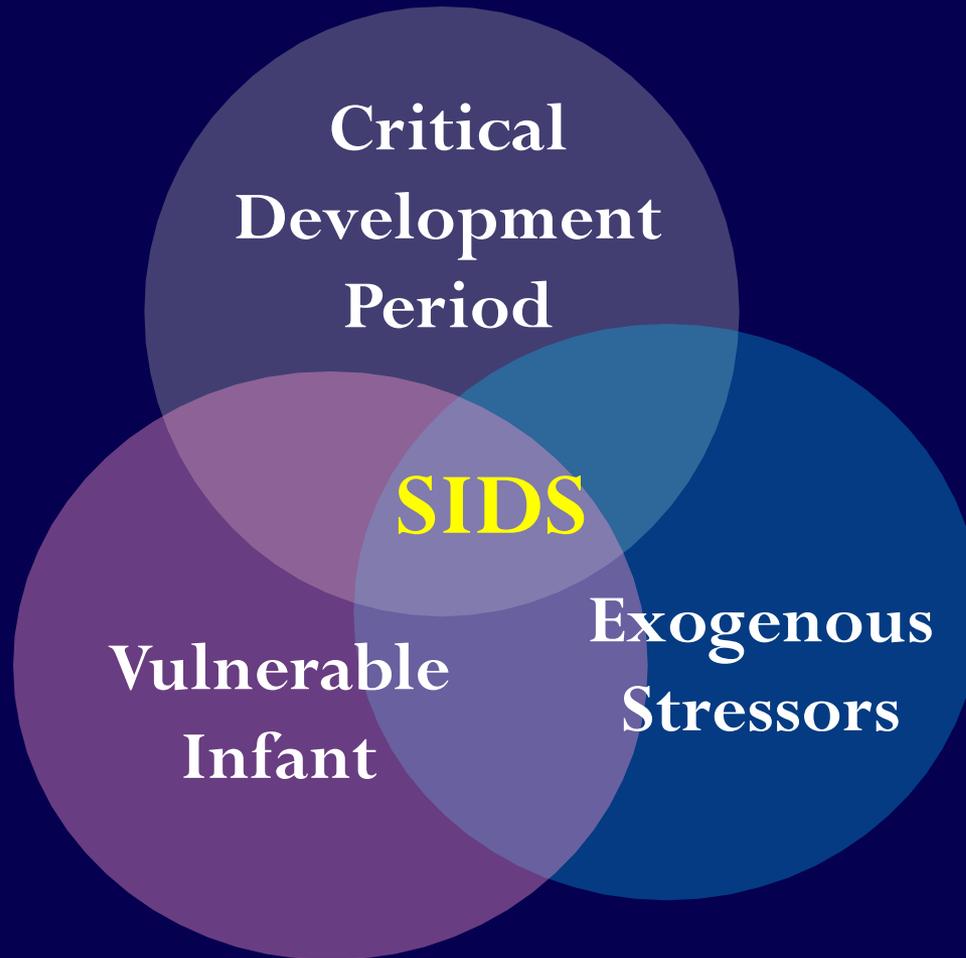
Why does SIDS occur?

- **Triple risk model-most widely recognized explanation for SIDS**
 - 1) Vulnerable infant: underlying defect or abnormality**
 - 2) Critical development period: vast physiological change & instability during first 6 months of life**

Why does SIDS occur?

- **Triple risk model-most widely recognized explanation for SIDS**
 - 1) Vulnerable infant: underlying defect or abnormality**
 - 2) Critical development period: vast physiological change & instability during first 6 months of life**
 - 3) Exogenous Stressors: External or environmental risk factors**

Triple Risk Model



Source: Filiano JJ, Kinney HC. Biology of the Neonate, 1994

AAP Policy Statement:

“The AAP . . . stresses the need to avoid redundant soft bedding and soft objects in the infant’s sleeping environment, the hazards of adults sleeping with an infant in the same bed, the SIDS risk reduction associated with having infants sleep in the same room as adults . . .”

AAP Task Force on Sudden Infant Death Syndrome (2005). The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment, and New Variables to Consider in Reducing Risk. *Pediatrics*

Bed Sharing

“Bed sharing between an infant and adult(s) is a highly controversial topic. Although electrophysiologic and behavioral studies offer a strong case for its effect in facilitating breastfeeding and the enhancement of maternal-infant bonding, epidemiologic studies of bed sharing have shown that it can be hazardous under certain conditions.”

Bed Sharing & Breastfeeding

- Well-documented positive correlation
- Complex 2-way relationship
- Unclear if:
 - Mothers share beds because they are breastfeeding,
- Or if:
 - Bed sharing makes breastfeeding more likely to be successful

Breastfeeding & SIDS

“We conclude that there is a relationship between breastfeeding and a reduced risk of SIDS.”

***Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries, Evidence Reports/Technology Assessments, No. 153. April 2007. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.ahrq.gov/clinic/tp/brfouttp.htm>***

Bed sharing & SIDS

“The potential risk associated with bed sharing and [SIDS] has led many professionals to recommend parents never to take their infants into bed with them”

What do you think?

Blair et al. Relationship Between Bed Sharing and Breastfeeding: Longitudinal, Population-Based Analysis. *Pediatrics*. November 2010

Bed sharing & SIDS

“Given the likely beneficial effects of bed sharing on breastfeeding rates and duration, risk reduction messages to prevent [SIDS] would be targeted more appropriately to unsafe infant care practices such as sleeping on sofas, bed sharing after the use of alcohol or drugs, or bed sharing by parents who smoke”

Blair et al. Relationship Between Bed Sharing and Breastfeeding: Longitudinal, Population-Based Analysis. *Pediatrics*. November 2010

Child Fatality Review in TX

- **Mandated by Texas Legislature in 1995.**
- **Creation of State Child Fatality Review (CFR) Committee to drive the development and support of local CFR teams in Texas.**
- **Texas Department of State Health Services is the lead agency for Child Fatality Review.**

CFR data

- **Review of 6 years of child death data**
 - **745 SIDS cases from 1999-2004**
 - **Ascertainment of risk factors**
 - **29.8% placed to sleep on back**
 - **80.1% exposed to ETS**
 - **42.3% not sleeping alone**
 - **69.4% not sleeping in a crib**

Child Fatality Review in TX



Discussion in the State Committee about SIDS data collected by the CFRTs led to a joint project between DSHS and DFPS to promote safe sleep for infants. The campaign includes promotional items including posters, infant t-shirts and magnets.

SIDS risk reduction efforts

- *Safe Sleep for Babies* fact sheet/poster



Why is Safe Sleep Important?

- Placing babies in a safe sleep position is very important to reduce the risk of Sudden Infant Death Syndrome (SIDS) or "crib death." When a baby, usually between the ages of 1-12 months old dies suddenly without a clear cause, the death is often referred to as SIDS.
- More babies between 1-12 months of age die from SIDS than any other cause. SIDS has also been called "crib death" but cribs do not cause SIDS.

What is the Safest Way for Babies to Sleep to Reduce the Risk of SIDS?

- Babies that are put to sleep and to nap on their backs are much less likely to die from SIDS.
- The safest place for babies to sleep or nap is in a crib or on a firm sleeping surface with a fitted sheet. The place where the baby sleeps or naps should not have toys, pillows or other soft items that could get near the baby's face.
- Everyone who takes care of babies like grandparents, friends, and baby-sitters, should know about safe sleep. Parents should share this information with anyone who will be taking care of their baby.
- Babies can get hot while they are sleeping, which can make them more at-risk for SIDS. It is safest to put babies to sleep with light clothing and the temperature of the room should feel comfortable to you.
- Babies do best when they are not exposed to tobacco smoke. Babies that are around people who are smoking are more at-risk for SIDS. It is safest to make sure babies are in a "smoke-free" zone at home, away from home, and in cars.

If you would like to learn more about Safe Sleep you may contact:

Texas Department of State Health Services
<http://www.dshs.state.tx.us/mch>

Texas Department of Family and Protective Services
<http://www.dfps.state.tx.us>

National Institute of Child Health and Human Development
<http://www.nichd.nih.gov/sids/>

Sources:
National Institute of Child Health and Human Development.
Back to Sleep Campaign 2005.
Available from: <http://www.nichd.nih.gov/SIDS>

Centers for Disease Control. Sudden Infant Death Syndrome 2007.
Available from: <http://www.cdc.gov/SIDS/index.htm>



SIDS risk reduction efforts

- **CFRT Position Statement on Safe Sleep for Infants**
- **Community-based safe sleep training**
- **Online training for CPS caseworkers**
- **PSA (video weblink)**
- **Safe sleep guidance as part of information for parents of newborns**

Resources

<http://www.txpeds.org/injury-preservation>

[http://www.dshs.state.tx.us/mch/#Safe Sleep](http://www.dshs.state.tx.us/mch/#SafeSleep)

[http://www.dshs.state.tx.us/mch/pdf/info for parents.pdf](http://www.dshs.state.tx.us/mch/pdf/info_for_parents.pdf)

Background for current study

- **No population-level data on infant care/sleep practices exists in Texas**
- **Certain care/sleep practices may be associated with risk of SIDS**
- **Need for baseline, population-level data**
 - **inform health education and outreach efforts targeted to high-risk population sub-groups**

Methods

- **Texas Infant Sleep Study (TISS)**
 - **survey of mothers who recently gave birth**

TISS Study Design

- **Stratified, statewide-representative sample survey**
- **Telephone survey in June-August 09**
- **Study population: Female residents of TX who had a live birth from 9/1/08-3/31/09**
- **Sample size: 1,802 mothers of infants 2-11 months of age**

Study Objectives

- **Characterize infant sleep practices in Texas**
- **Estimate prevalence of various SIDS risk factors**
 - **Sleep position**
 - **Sleep surface**
 - **Sleep environment**
 - **Parent/caretaker risk behaviors**

RESULTS

Sleep position

“In what position do you usually lay down your baby to sleep or nap?”

Sleep position

- **Approximately 68% of mothers reported that they usually lay their baby down to sleep on their back**

Sleep position

- **Approximately 68% of mothers of infants in Texas reported that they usually lay their baby down to sleep on their back**
- **Racial/ethnic & income differences**

Sleep position

- Approximately 68% of mothers of infants in Texas reported that they usually lay their baby down to sleep on their back
- Racial/ethnic & income differences

Race/Ethnicity **P<0.0001**

Whites **72%**

Hispanic **70%**

Black **47%**

Sleep position

- Approximately 68% of mothers of infants in Texas reported that they usually lay their baby down to sleep on their back
- Racial/ethnic & income differences

Race/Ethnicity	P<0.0001	Income	P=0.18
Whites	72%	<\$35K	67%
Hispanic	70%	\$35K+	71%
Black	47%		

Race still significant after controlling for other factors?

- **Using multivariate logistic regression to adjust for mother's age, education, income, marital status, acculturation, and infant's age and birth weight:**
- **Racial/ethnic differences**
 - **Blacks: AOR=2.6, 95% CI: 1.9-3.6**
 - **Hispanics: AOR=0.8, 95% CI: 0.55-1.1**
- **Blacks still more likely to NOT place infant on back, compared to Whites**

Sleep surface

“Where does your baby usually sleep or nap?”

Sleep surface

- **More than three-quarters of mothers of infants in Texas reported that their infant usually sleeps in a crib, bassinet, cradle**

Sleep surface

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- **Racial/ethnic & income differences**

Sleep surface

- More than three-quarters of mothers of infants in Texas reported that their infant usually sleeps in a crib, bassinet, cradle
- Racial/ethnic & income differences

Race/Ethnicity **P<0.001**

Whites **88%**

Hispanic **61%**

Black **73%**

Sleep surface

- More than three-quarters of mothers of infants in Texas reported that their infant usually sleeps in a crib, bassinet, cradle
- Racial/ethnic & income differences

Race/Ethnicity	P<0.001	Income	P<0.001
Whites	88%	<\$35K	73%
Hispanic	61%	\$35K+	84%
Black	73%		

Bed sharing

“Do you ever lie down or sleep with your baby?”

Bed sharing

- **Approximately three-quarters of mothers reported that they have ever lay down or slept with their baby**

Bed sharing

- Approximately three-quarters of mothers reported that they have ever lay down or slept with their baby
- Racial/ethnic & income differences

Bed sharing

- Approximately three-quarters of mothers reported that they have ever lay down or slept with their baby
- Racial/ethnic & income differences

Race/Ethnicity **P<0.001**

Whites **63%**

Hispanic **79%**

Black **87%**

Bed sharing

- Approximately three-quarters of mothers reported that they have ever lay down or slept with their baby
- Racial/ethnic & income differences

Race/Ethnicity	P<0.001	Income	P<0.001
Whites	63%	<\$35K	79%
Hispanic	79%	\$35K+	68%
Black	87%		

Race still significant after controlling for income?

- **Using multivariate logistic regression to adjust for income as well as mother's age, education, marital status, acculturation, and infant's age and birth weight:**
- **Racial/ethnic differences**
 - **Blacks: AOR=3.6, 95% CI: 2.4-5.5**
 - **Hispanics: AOR=3.0, 95% CI: 1.9-4.8**
- **Blacks & Hispanics still more likely to bed share, as compared to Whites**

Significant differences in how bed sharing occurs

Race/ Ethnicity	All night	First part	Last part	Several times
White	18%	29%	44%	10%
Hispanic	43%	34%	16%	7%
Black	48%	27%	18%	7%

Significant differences in how bed sharing occurs

P<0.001

Race/ Ethnicity	All night	First part	Last part	Several times
White	18%	29%	44%	10%
Hispanic	43%	34%	16%	7%
Black	48%	27%	18%	7%

Significant differences in bed sharing beliefs

P<0.0001

Race/ Ethnicity	Commonly done in family	Safer for baby	To breastfeed	To be close/bond
White	25%	18%	56%	71%
Hispanic	43%	50%	57%	88%
Black	42%	49%	36%	80%

Significant differences in bed sharing beliefs

$P < 0.0001$

Race/ Ethnicity	Commonly done in family	Safer for baby	To breastfeed	To be close/bond
White	25%	18%	56%	71%
Hispanic	43%	50%	57%	88%
Black	42%	49%	36%	80%

Patient-Provider Communication

P<0.0001

Doctor's attitude towards bed-sharing

**Race/
Ethnicity**

**Doc talked
about bed
sharing**

Positive

Negative

Neutral

White

39%

5%

68%

27%

Hispanic

35%

21%

55%

25%

Black

35%

17%

50%

33%

Public Health Recommendations

- **Providers may tailor risk reduction messages, based on known risk factors such as smoking, alcohol/drug use/abuse, etc.**
- **Culturally-relevant educational messaging could also be targeted to sub-populations to reduce the risky behavior of prone sleep position**

Potential Limitations

- **Social desirability bias**
- **Self-selection bias**
- **Differential recall bias**

Future directions

- **F/U of cohort of infants**
 - Link birth to infant death records
 - Study the association between infant death, including deaths coded as SIDS, and sleep practices among a statewide representative sample of mothers in Texas

Other work in progress

- **Review of hx of CPS involvement in unintentional injury deaths among children**
 - **Manuscript submitted to Injury journal**

Disclaimer

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the views of the Texas Department of State Health Services.

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Thank you!

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