

Infant Death Investigation of Cases Identified by the Department of Family Protective Services, Texas, 2007-2008



**Office of Program Decision Support
Division of Family and Community Health Services**

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Table of Contents

Overview	1
Key Findings.....	1
Conclusion	2
Introduction.....	3
Background.....	3
Methods.....	4
Results	5
Non-Modifiable Factors	5
Semi-Modifiable Factors	7
Modifiable Factors.....	8
Conclusions/Recommendations	11
References	12

Overview

The Texas Department of State Health Services (DSHS) reviewed 169 infant/toddler deaths identified by the Texas Department of Family and Protective Services (DFPS) as associated with infant bed-sharing/co-sleeping. Analyses focused on 166 infant (less than one year of age) deaths. The initial objective of this investigation was to determine whether co-sleeping was a causal factor in these infant deaths. Another objective was to characterize the cluster, including describing characteristics of the infants and their caretakers as well as the circumstances and environmental factors that may have been associated with the deaths.

To facilitate consistent review of Child Protective Services (CPS) records and standard identification of risk factors, a data abstraction instrument was developed by DSHS. In addition, provisional birth and death certificate data were linked to these CPS case reports.

The largest number of deaths in this cluster occurred among Black infants, which is consistent with existing literature on infant co-sleeping deaths. However, the racial/ethnic distribution of these selected infant deaths differs substantially when compared to the racial/ethnic distribution among all infant deaths. The peak of cases seen during the winter months is also consistent with the existing literature.

Key Findings

- The 166 cases are not representative of all unexplained infant deaths:
 - 38% of families had prior involvement with DFPS.
 - 32% of caretakers reported substance use (alcohol, illicit drug, prescription medication) before sharing sleep surface with infant.
 - Large proportion of cases resided in low socioeconomic status neighborhoods/communities.
- In addition to co-sleeping, other significant risk factors were identified among the cases investigated at rates double and triple than that found among other infants born in 2007.
 - 24% were born preterm (vs. 11% among 2007 TX births).
 - 19.5% were low-birth weight (vs. 8% among 2007 TX births).
 - 16.7% born both preterm & low-birth weight (vs. 6% among 2007 TX births).
 - 15.6% of mothers smoked during pregnancy (vs. 5% among 2007 TX births).
- Other risk factors identified by DFPS, but data not consistently available for all cases:
 - 70% of infants had a recent illness.
 - 39% of infants had an underlying medical condition.
- Safe sleep practices were not followed in many of the cases:
 - 70% of infants were sleeping on their stomach or side.
 - 70% of infants had pillows/blankets near their nose or mouth.
 - 21% of infants were sleeping on sofas, futons, chairs or waterbeds.
- Co-sleeping was noted on six death certificates.

Conclusion

This investigation initially sought to determine if co-sleeping was a cause in these infant deaths. Although these specific cases were selected because co-sleeping was noted as a descriptor in the CPS reports, this study cannot affirm a link between co-sleeping and the infant deaths. Several factors were identified that may have contributed or caused the death independent of the act of co-sleeping. Data limitations prevent additional analysis and more definitive conclusions regarding the deaths of these children. Learning more about these deaths may help to better target future interventions. Use of a standardized data collection tool for this purpose will enhance the understanding of these types of deaths.

Introduction

On January 12, 2009, the Office of Program Decision Support (OPDS), Division of Family and Community Health Services, Texas Department of State Health Services, initiated an epidemiologic investigation into unexplained infant and child deaths that occurred across Texas from 2007 to 2008. Deaths in the cluster were thought to have been related to infants co-sleeping with adults by the Texas Department of Family and Protective Services (DFPS). The initial objective of this investigation was to determine whether co-sleeping was a causal factor in these infant deaths. Another objective was to characterize the cluster, including describing characteristics of the infants and their caretakers as well as the circumstances and environmental factors that may have been associated with the deaths.

Background

Sudden unexpected infant deaths (SUID) are deaths among infants (younger than 1 year of age) that occur suddenly and unexpectedly and whose manner and cause are not immediately obvious¹. Upon thorough investigation, including autopsy, examination of the death scene, and review of medical records by a medical examiner/coroner, the cause and manner may be explained. Some causes of SUID, which can be revealed through investigation include poisoning, metabolic disorders, neglect or homicide, accidental suffocation, and hypothermia/hyperthermia. Sudden Infant Death Syndrome (SIDS) is a subset of SUID in which the infant death remains unexplained following a complete investigation.

SUID deaths are among the leading causes of infant death in the United States; with SIDS being the third leading cause. Other forms of SUID (e.g. poisoning or accidental suffocation) are forms of unintentional injury deaths, which are the sixth leading cause of infant deaths². In 2005, the overall U.S. infant mortality rate was 6.9 per 1,000 live births. The rate for Texas was slightly lower at 6.6 per 1,000 live births³. There are approximately 4,500 SUID deaths each year in the United States; SIDS accounts for approximately half of those deaths. In Texas, of the 2,303 infant deaths that occurred among the 2004 birth cohort (all live births occurring in 2004), 222 (9.6%) were attributed to SIDS.

While the exact causes of SIDS are unknown, several risk factors have been identified. These risk factors may be divided into those that are non-modifiable, semi-modifiable, and modifiable, as shown below.

Non-modifiable risk factors

- Seasonality (winter months of November-March)
- Infant age (2-4 months)
- Infant sex (male)
- Infant race (African American or American Indian race/ethnicity)

Semi-modifiable risk factors

- Low birth weight (infant born <2,500 g)
- Preterm birth (infant born <37 completed weeks gestation)
- Plurality (infants from multiple births, e.g. twins, triplets, etc.)

Modifiable risk factors

- Maternal age (<18 years of age)
- Short birth interval (<18 months between births)
- Maternal smoking during pregnancy
- Maternal alcohol and/or drug use during pregnancy
- Non-parental caregiver
- Infant exposure to secondhand smoke
- Infant overheating during sleep
- Infant sleep position (side/stomach)
- Non-customary infant sleep position (e.g. back sleeper placed on stomach)
- Unsafe infant sleep location (e.g. adult bed, chair, sofa, etc.)
- Cluttered infant sleep space (e.g. loose bedding, toys, etc.)
- Infant bed-sharing with adults/other children

There may be additional risk factors associated with SIDS that have not yet been identified. However, the breadth and quality of existing data are limited by the fact that SIDS cases are not always investigated; and when they are, data are not collected and reported in a consistent, systematic manner. Every attempt to address these limitations was made in the current investigation.

Methods

Hard copies of case reports for 170 child deaths identified by DFPS Child Protective Services (CPS) as occurring while bed-sharing were transferred to DSHS. Upon initial review, it was determined that one duplicate case was present. The focus of this investigation was infant deaths. Therefore, cases in which the decedent was one year of age or older were excluded limiting the analysis to 166 cases. To facilitate thorough, consistent review of CPS records and standard identification of risk factors, an instrument was developed with which to abstract data from CPS records. Design of the instrument took into account information from prior SUID risk factor studies as well as Centers for Disease Control and Prevention (CDC) recommendations. This DSHS investigation form was modeled after the CDC's Sudden Unexplained Infant Death Investigation Reporting form, <http://www.cdc.gov/SIDS/SUIDAbout.htm>. Data currently available in the CPS case reports as well as data from infant birth and death certificates were also taken into consideration in development of the instrument.

Using available CPS records (intake reports, contact log narratives, safety assessment reports and risk assessment reports), the data collection instrument was completed for each case included in the analysis. Reviews were completed by one epidemiologist with background and training in childhood maltreatment, eliminating bias due to differences between reviewers.

While 166 infant deaths were reviewed, risk-factor information contained in CPS records was not consistently available for all 166 cases. Therefore, results presented in this report are only based on cases for which information was available. Variation in the denominator of 166 cases is due to either incomplete or unavailable data from CPS records or incomplete or unavailable data on the birth or death certificate.

Provisional 2007 and 2008 birth and death certificate data were obtained from the DSHS Center for Health Statistics and linked to each case. Linkage of CPS records to birth certificate data was done on the following identifying fields:

- mother's first and last name,
- infant's date of birth,
- mother's social security number, and
- child's first and last name.

The child's first, middle, and last name, date of birth, and date of death were used to link CPS records to death certificate data. There were 154 matches to birth certificates and 142 matches to death certificates. Therefore, any risk factor analyses based on birth or death certificate data will be limited to 154 and 142 infant death cases respectively. Linked data were cleaned to reduce omissions and eliminate erroneous matches.

Street addresses of cases were geo-coded and census tract information was also obtained with Centrus Desktop software. ArcGIS software was used to map the cases.

Results

Non-Modifiable Factors

The age of the 166 infants included in the analysis ranged from 2 days to 12 months with approximately three-quarters of cases ≤ 4 months of age. Median age of the 166 infants included in the analysis was 2.3 months (mean=3.1 months) (Figure 1). Slightly more males (53.6%) were represented in this sample. Of the 156 infants for whom race/ethnicity data were available, 36.5% were Black, 31.4% were Hispanic, 27.6% were white and 4.5% were indicated as "other" (Figure 2). This differs from the racial breakdown of deaths among all infants born in 2004, which was 43.8% Hispanic, 32.8% White, 20.3% Black and 3.1% other.

Figure 1. Distribution of Cases by Infant's Age (n=166)

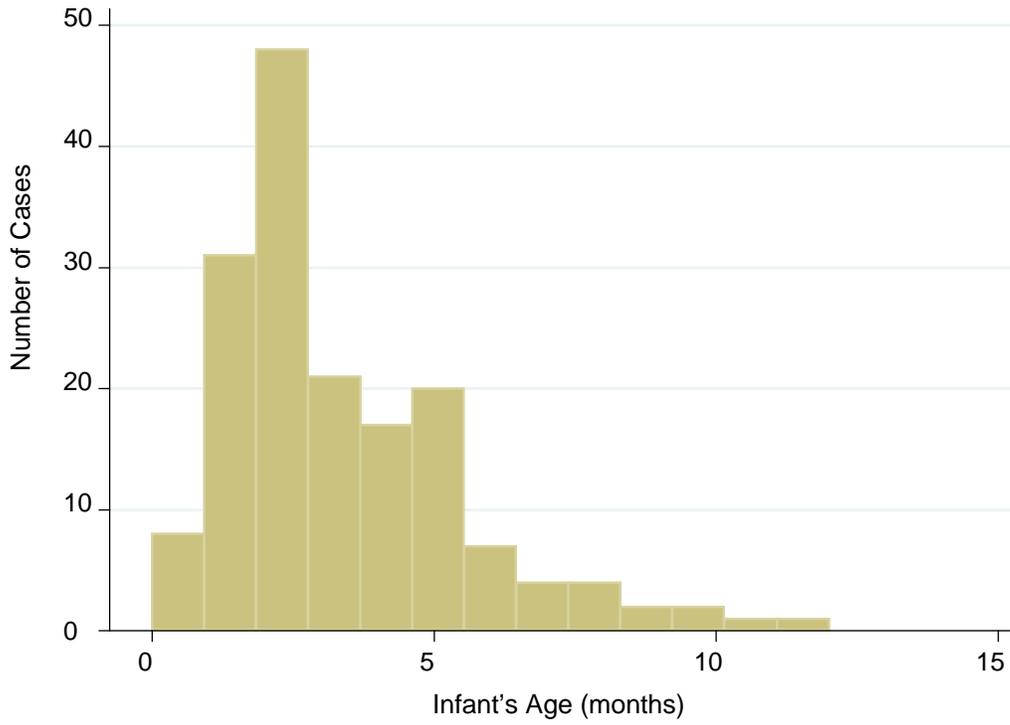
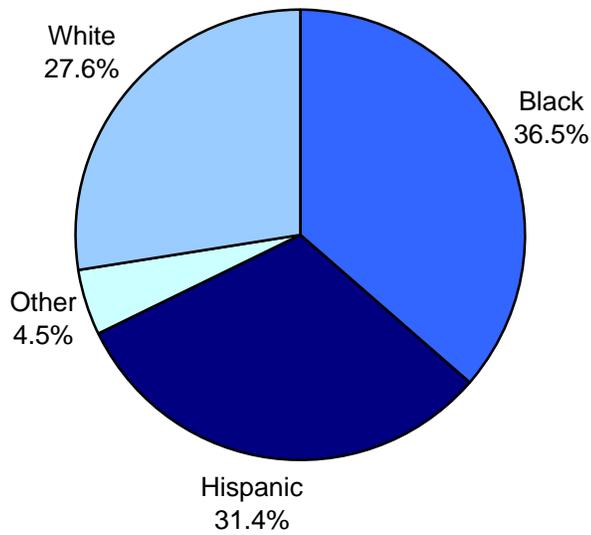
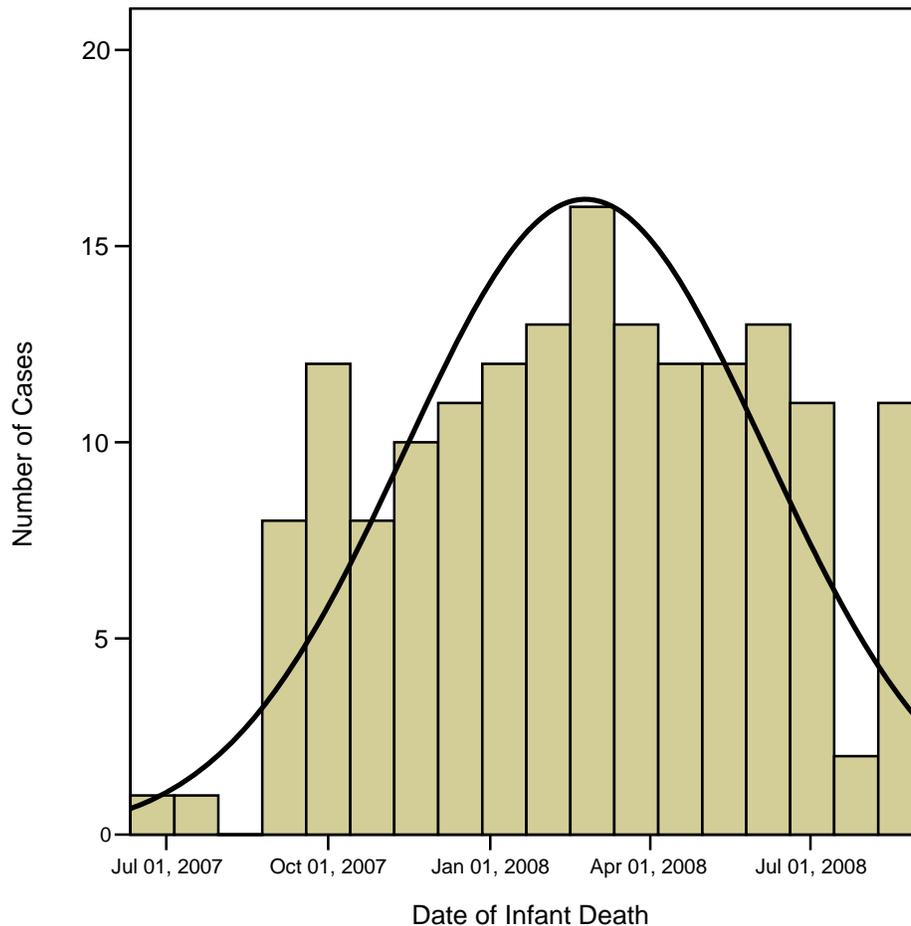


Figure 2. Racial/Ethnic Composition of Cases (n=156)



The infant death cases identified by DFPS occurred between June 22, 2007 and August 30, 2008. There appeared to be a seasonal peak in cases with the majority of identified deaths occurring during the winter months (Figure 3).

Figure 3. Temporality of Cases: Distribution by Infant's Date of Death (n=166)



Semi-Modifiable Factors

Based on birth certificate data that was available for 154 infant death cases, a large proportion of children were born preterm (24% vs. 11% prevalence among 2007 TX live births), low birth weight (19.5% vs. 8% prevalence among 2007 TX births), or both preterm and low birth weight (16.7% vs. 6%). Abnormal conditions of the newborn, for example the infant required assisted ventilation or neonatal intensive care unit (NICU) admission, were noted on the birth certificate for 16.9% (26/154) of the infant deaths.

CPS records for 61 of the 166 infant death cases contained information on infant medical history. Of the 61 infants for whom presence or absence of medical history was noted in CPS records, 24

cases, or 39%, were noted to have had some sort of underlying medical condition (e.g. sleep apnea, heart murmur).

CPS records for 50 of the 166 infant death cases contained information on recent illness. Among the 50 infants for whom presence or absence of a recent illness was noted in CPS records, 35 or 70% were noted to have had a recent illness prior to death.

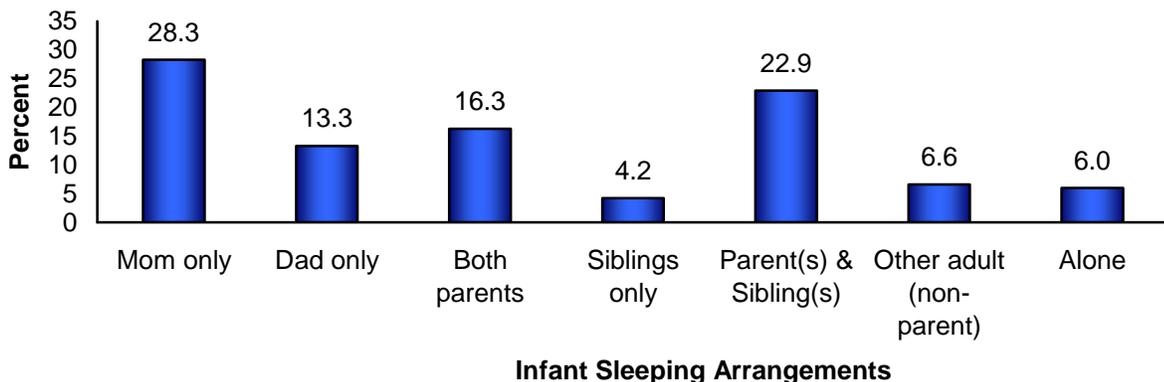
Modifiable Factors

Based on available information on birth certificates, approximately 15.6% of 154 mothers reported having smoked during pregnancy, as compared to 5% of mothers among all 2007 live births in Texas.

The mother's age at the time of the infant's death was calculated for the 164 cases for which mother's date of birth information was contained in CPS records. Mother's age ranged from 14 to 41 years (median= 23.6 years; mean=24.0 years) with 10.4% of mothers under the age of 18 years. Of 159 infants for whom information regarding presence or absence of other children in the house was noted in CPS records, almost thirty percent lived in homes with at least 2 other children under the age of 6. Information on the infants' caretakers at the time of death was noted on 162 of the CPS records. The majority of infants (154/162 or 95.1%) were under the care of at least one parent at the time of death and only 4.9% were with a non-parental caregiver. It was noted that 2 infants were in foster care at the time of death.

The most complete and consistently reported data were on the infant's sleeping arrangements at time of death. Among this group of 166 infant deaths, only 6.0% of the infants were sleeping alone at the time of death (Figure 4). The remainder were sleeping with one to five other individuals.

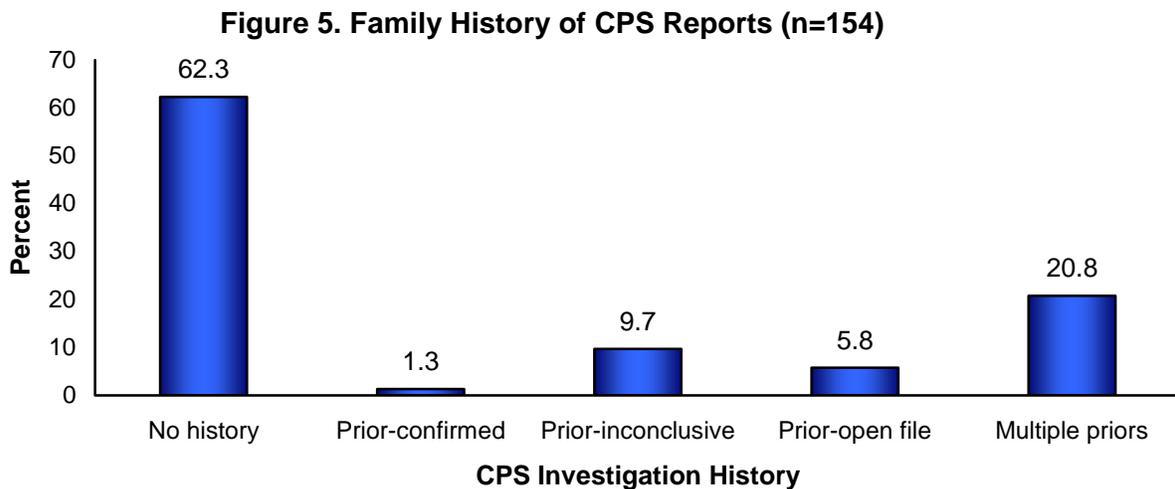
Figure 4. Characteristics of Infants' Sleeping Arrangements at Time of Death (n=166)



Information on infant sleep surface was only noted for 152 infants in CPS case reports. Twenty-one percent of the infants were sleeping on a sofa, futon, chair, or waterbed (32/152) at the time of death. Information on infant sleep position was only noted for 93 infants in CPS case reports.

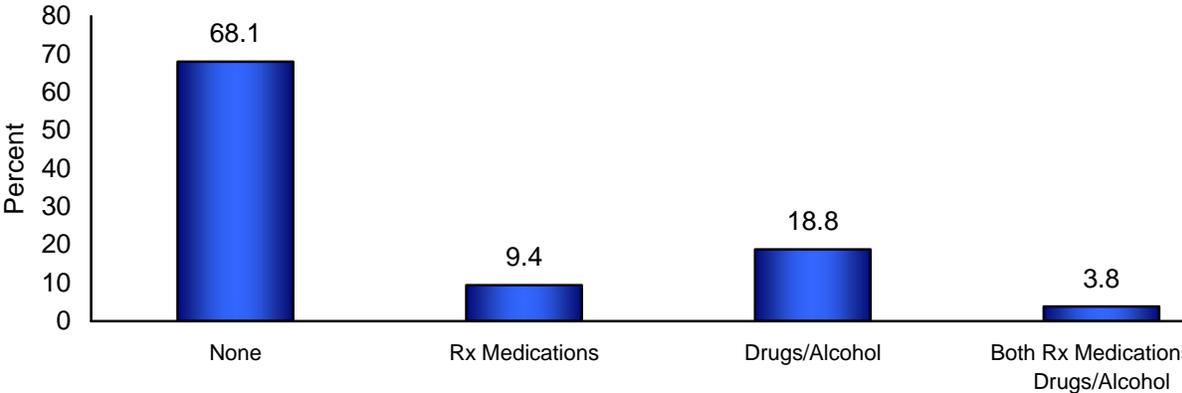
For the 93 infants for whom information on sleep position was available, a large proportion (70%) were sleeping in positions other than on their back (46.2% on stomach & 23.7% on side) at the time of death. Information on the infant’s normal sleep location was only noted for 60 infants in CPS case reports. Approximately 30% of the 60 cases for whom usual sleep location was available were reportedly sleeping in a location different than usual (e.g. on sofa versus in bed or crib at the time of death). Information on the infant’s usual sleep position was only noted for 47 infants in CPS case reports. Of these 47 cases for which usual sleep position information was available, approximately 21% were sleeping in a position different than usual. Information on presence or absence of objects around the infant when sleeping was only noted for 27 infants in CPS case reports. More than 70% of 27 infants for whom information was noted on the CPS case report had an object such as a pillow or blanket near their nose or mouth at the time of death.

Information regarding presence or absence of prior CPS involvement was documented on the majority CPS reports (154/166). Fifty eight (37.7%) of 154 infants were from families that had prior CPS involvement. Of all families on record, 32 of 154 (or 20.8%) had multiple prior cases on file (Figure 5).



Information regarding presence or absence of caregiver drug or alcohol use was documented on the majority of CPS reports (160/166). Approximately 32% (51/160) of caregivers reported having been under the influence of illicit drugs, alcohol, prescription drugs, or some combination of the three. Figure 6 shows the distribution of substance use among caregivers at the time of each infant’s death.

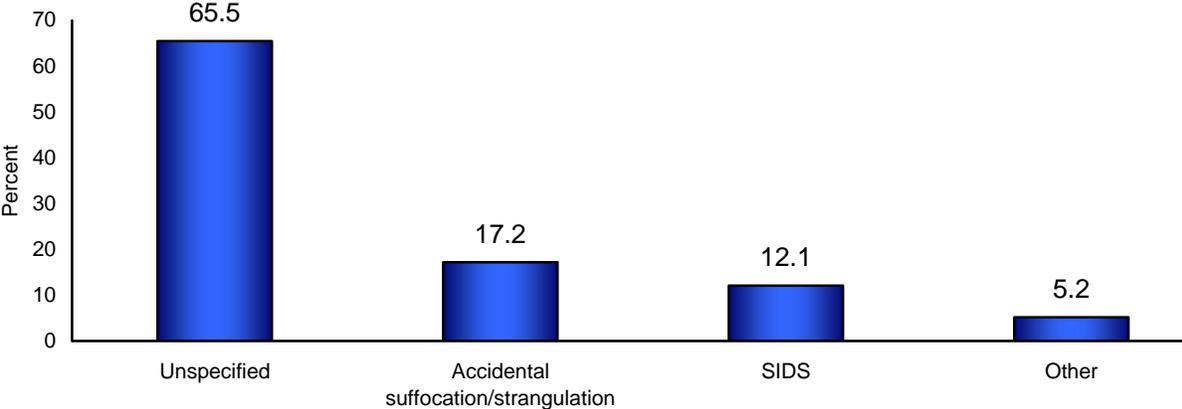
Figure 6. Substance Use among Caregivers at Time of Infant Death (n=160)



Data in CPS reports regarding environmental tobacco smoke (ETS) exposure in the home was limited, and presence or absence of ETS exposure was only documented on eight case reports. Among these eight cases, smokers were present in 75% of the homes. Similarly, information on ambient room temperature was not available for the majority of the cases. Temperatures were only noted for two households (1%), and these were 70 and 84 degrees Fahrenheit, respectively. In addition, two other households were noted to be *hot and stuffy* and *very warm*.

Autopsies were performed on 85 (59.9%) of the 142 infant deaths for which death certificate information was available. ICD-10 (International Classification of Diseases) cause of death information was coded for 34.9% (58/166) of these cases, of which, autopsy findings were available prior to completion of cause of death for 54% (31/58). Figure 7 below shows cause of death for the 58 cases for which this information was available. As Figure 7 shows, the cause of death was unspecified in the majority of cases (38/58). Of the 38 cases with an unspecified cause of death, two death certificates noted the occurrence of co-sleeping. Accidental suffocation and strangulation in bed accounted for the next most common cause of death, of which four cases were associated with overlay by another individual. Among the seven cases with SIDS as cause of death, occurrence of co-sleeping was noted on four death certificates.

Figure 7. Cause of Death (n=58)



Conclusions/Recommendations

One objective of this study was to characterize the cluster, including describing characteristics of the infants and their caretakers as well as the circumstances and environmental factors that may have been associated with the deaths. Several findings from this investigation are supported by the empirical literature. While the largest number of deaths in this cluster occurred among Black infants, which is consistent with past research, the racial/ethnic distribution of cases differs substantially from that found among all infant deaths in the 2004 birth cohort (36.5% Black vs. 20.3%, 27.6% White vs. 32.8%, and 31.4% Hispanic vs. 43.8%). The expected seasonal variation in SUID deaths, with the peak of cases occurring during winter, was also observed in these data. Other significant findings were the large number of caretakers who were under the influence of illicit drugs and/or alcohol at the time of the infant's death and the high proportion of infants' families with prior CPS involvement.

Although the initial objective of this study was to determine whether co-sleeping was a causal factor in these infant deaths, data limitations prevent the establishment of this relationship. The data highlights the challenges of investigating and determining factors associated with SUID cases. Though the majority of the forensic investigations had pending laboratory results and were not complete at the time the death certificates were filed, it is likely that a large proportion of these deaths will remain unexplained.

The majority of reports did not note the infant's normal sleep position which hinders examining this as a factor in the death. In addition, few CPS reports captured information on smoking in the households where the infant deaths occurred. Therefore, it is impossible to examine the potential importance of secondhand smoke exposure in these cases. In addition, we are unable to provide insight on the importance of overheating in any of these deaths due to the absence of notation of the ambient room temperature at the scene.

Because CPS records were the primary data source, and not designed with this type of investigation in mind, there was a large proportion of missing data for a number of key variables. Data was completely unavailable for other items that would have been helpful in characterizing the factors associated with these infant deaths.

Variables for which data is not consistent available:

- Presence and nature of any medical conditions and/or recent illness of the infant
- Description of recent feedings (time and method)
- Alcohol, illicit & prescription drug use of all caretakers at time of death
- Household members smoking cigarettes
- Ambient room temperature at infant's time of death
- Presence of any items near the infant's face/head at time of death
- Infant's usual sleep location and position

Important variables for which data was never obtained:

- Pacifier use at time of death
- Interval between infant last known alive and discovery of death

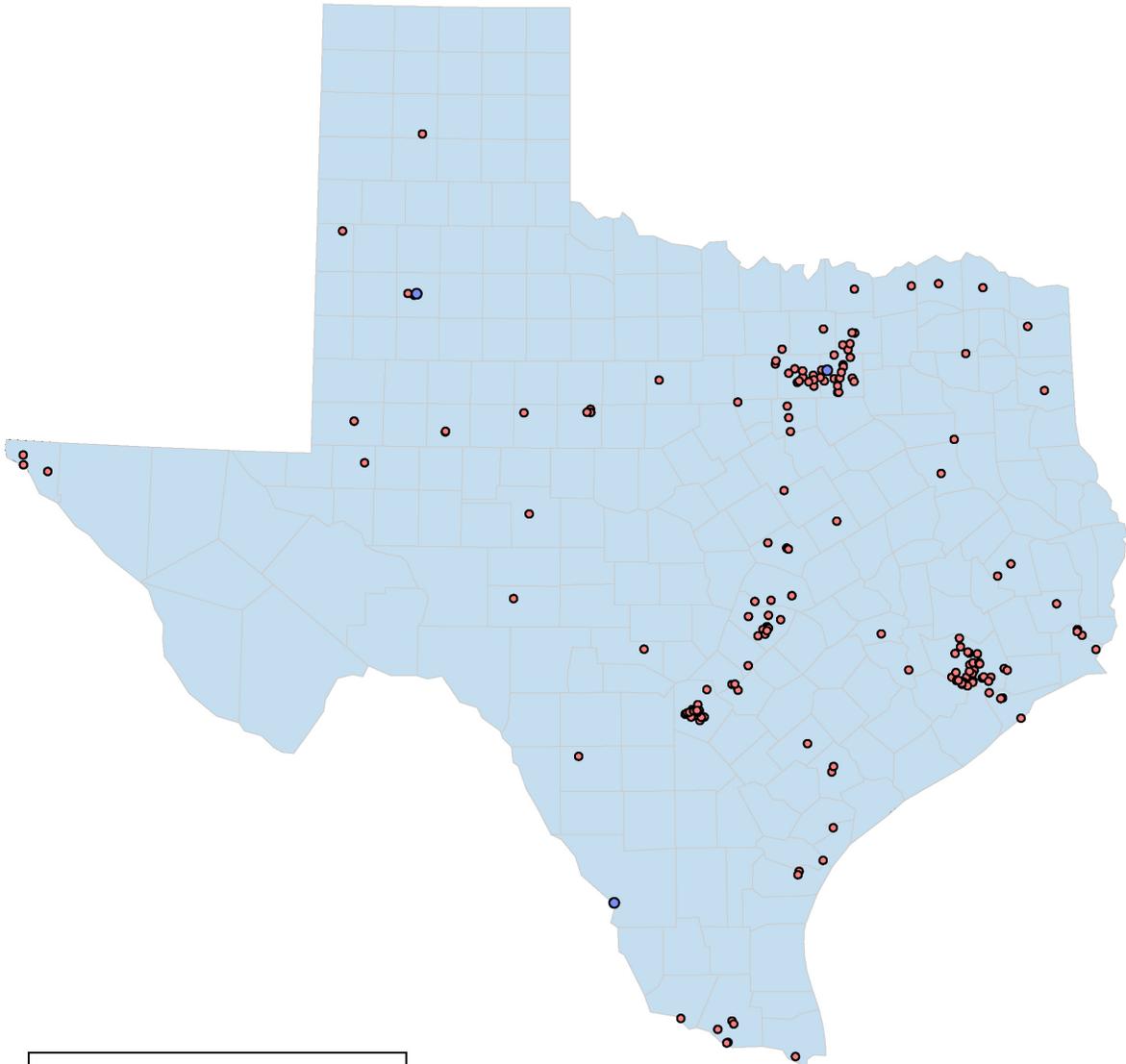
Incorporating the Texas Sudden and Unexplained Infant Death Investigation Reporting form, the data abstraction instrument designed for this investigation, into CPS protocol for future investigations of SUID could improve the quality and quantity of data available. The form is designed to ensure that all pertinent information is collected in a sensitive and consistent manner. In addition, data collected in this format would be more easily and rapidly analyzed, thereby allowing for more timely feedback to DFPS and other stakeholders.

References

- 1) Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
<http://www.cdc.gov/SIDS/index.htm>.
- 2) Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
<http://webappa.cdc.gov/sasweb/ncipc/leadcaus10.html>.
- 3) Texas Department of State Health Services. Center for Health Statistics.
<http://www.dshs.state.tx.us/CHS/VSTAT/imr/imr.shtm>.

Appendix A: Map of DFPS identified cluster of child deaths, Texas, June 22, 2007 through August 30, 2008

DFPS identified cluster of child deaths--Texas, June 22, 2007-August 30, 2008



- Infant (<1 year of age) deaths, n = 166
- Toddler (12-24 months of age) deaths, n = 3

Appendix B: Cause of Death Information from Death Certificate

Cause of death from death certificate (n=58)			
ICD-10 code	Code description	Frequency (percent)	Condition(s) listed on death certificate
R99	Other ill-defined and unspecified causes of mortality (Death NOS, Unknown cause of mortality)	38 (65.5%)	- <i>Pending</i> (x30) - <i>Could not be determined/ undetermined</i> (x4) - <i>Not ascertained after scene investigation, autopsy; toxicology & metabolic screens</i> (x2) - <i>Undetermined (co-sleeping)</i> (x2)
W75	Accidental suffocation and strangulation in bed. (Includes suffocation and strangulation due to bed linen, mother's body, pillow)	10 (17.2%)	- <i>Acute bronchopneumonia & Suffocation</i> (x1) - <i>Suffocation</i> (x1) - <i>Apparent Asphyxia</i> (x1) - <i>Mechanical asphyxia</i> (x1) - <i>Positional Asphyxia</i> (x2) - <i>Asphyxia due to overlay</i> (x3) - <i>Overlay</i> (x1)
R95	Sudden infant death syndrome	7 (12.1%)	- <i>SUID</i> (x1) - <i>SIDS</i> (x2) - <i>SIDS with history of co-sleeping</i> (x1) - <i>SUID with co-sleeping</i> (x1) - <i>SUID while co-sleeping; bed sharing</i> (x1) - <i>Undetermined - co-sleeping</i> (x1)
R9.2	Respiratory arrest (Cardiorespiratory failure)	1 (1.7%)	<i>Cardiopulmonary failure of unknown origin</i>
P2.1	Fetus and newborn affected by other forms of placental separation and hemorrhage (Abruptio placentae; Accidental hemorrhage; Antepartum hemorrhage; Damage to placenta from amniocentesis, caesarean section or surgical induction; Maternal blood loss; Premature separation of placenta)	1 (1.7%)	<i>Complications of anoxic encephalopathy due to placental abruption</i>
P21.9	Birth asphyxia, unspecified	1 (1.7%)	<i>Asphyxia</i>

**Appendix C: Texas Sudden and Unexplained Infant
Death Investigation Reporting Form**

Texas Sudden and Unexplained Infant Death Investigation Reporting Form

INFANT INFORMATION

CPS Case Number: _____

Name: First: _____ Middle: _____ Last: _____

Date of Birth: _____ Unk Date of Death: _____ Unk

Race/Ethnicity: White Black Hispanic Other: _____

Sex: Male Female

Underlying Medical Conditions: _____

Previous Hospitalizations? Yes No Unk Vaccines Up To Date? Yes No Unk

Current Height: _____ Current Weight: _____

Recent Illness/Injury? Yes No Unk In Foster Care? Yes No Unk

What Was Infant Wearing at Time of Death? _____

Recent Feeding Before Death? Breast Bottle Other Unknown

If Bottle, Any Solids (e.g. Cereal) in Bottle? Yes No Unknown

Other Solid Foods Given: _____

HOUSEHOLD INFORMATION

Street Address: _____ City: _____

County: _____ Zip Code: _____

Household Income: _____

Environmental Cigarette Smoke in Home (Anyone in Home Smoking)? Yes No

Ambient Temperature in Home: _____ HVAC Type: _____

Fan Use at Time of Death: Yes No Unknown

Number of People Living in Home: _____

Number Other Children in Home Under Age 6: _____

CPS History:

- | | |
|--|---|
| <input type="checkbox"/> None | <input type="checkbox"/> Previous Investigation-Confirmed Abuse/Neglect |
| <input type="checkbox"/> Previous Investigation-Inconclusive | <input type="checkbox"/> Previous Investigation-Open File |
| <input type="checkbox"/> Multiple Previous Investigations | <input type="checkbox"/> Unknown |

CIRCUMSTANCES OF DEATH

Where Did Death Occur?

- Primary Home
- Daycare/Caregiver Home
- Other
- Non-Custodial Parent Home
- Foster Home
- Unknown

Guardian(s)/Caretaker(s) At Time Of Death (Check All That Apply):

- Biological Mother
- Grandmother
- Other
- Biological Father
- Grandfather
- Unknown

Caretaker 1:

- Date Of Birth: _____ Relation To Child: _____
Current Alcohol Use: Yes No Unk Current Drug Use: Yes No Unk
Current Cigarette Use: Yes No Unk Current Rx. Drug Use: Yes No Unk

Caretaker 2:

- Date Of Birth: _____ Relation To Child: _____
Current Alcohol Use: Yes No Unk Current Drug Use: Yes No Unk
Current Cigarette Use: Yes No Unk Current Rx. Drug Use: Yes No Unk

Caretaker 3:

- Date Of Birth: _____ Relation To Child: _____
Current Alcohol Use: Yes No Unk Current Drug Use: Yes No Unk
Current Cigarette Use: Yes No Unk Current Rx. Drug Use: Yes No Unk

Sleeping Location At Time of Death:

- Bed With Standard Mattress
- Crib
- Bassinette
- Futon
- Chair
- Other: _____
- Waterbed
- Playpen/Portable Crib
- Infant Co-Sleeper (a crib that attaches to an adult bed)
- Sofa
- Mattress On Floor
- Unknown

Usual Sleeping Location:

- Bed With Standard Mattress
- Crib
- Bassinette
- Futon
- Chair
- Other: _____
- Waterbed
- Playpen/Portable Crib
- Infant Co-Sleeper (a crib that attaches to an adult bed)
- Sofa
- Mattress On Floor
- Unknown

Items Near Infant's Face/Nose/Mouth At Time Of Death:

- Pillows
- Bumper Pads
- Toys
- Other: _____
- Blankets
- Stuffed Animals
- Pacifier
- Unknown

CIRCUMSTANCES OF DEATH CONTINUED

Location/Position Found At Death:

- Between Bed And Wall
- Wedged In Cushions Of Couch/Futon
- Other: _____
- Caught In Headboard/Footboard
- Between Mattress And Bed/Crib Frame
- Unknown

Use of Pacifier At Time Of Time: Yes No Unknown

Co-Sleeping/Bed Sharing At Time Of Death:

- No One
- Parent(s) (Number: _____)
- Sibling(s) (Number: _____)
- Other: _____
- Unknown

Sleep Position At Death: On Back On Side On Stomach Unknown

Usual Sleep Position: On Back On Side On Stomach Unknown

Time Infant Was Last Known To Be Alive: _____ AM PM

Time Infant Was Discovered Unresponsive: _____ AM PM

Evidence of Abuse/Neglect At Time Of Death: Yes No Unknown

Describe: _____

Comments: _____

DATA FROM TEXAS BIRTH CERTIFICATE

Estimated Gestation At Birth: _____ weeks Child Birth Weight: _____ grams

Birth Mom Date Of Birth: _____ Birth Mom Height: _____

Birth Mom Marital Status: Married Not Married Unknown

Birth Mom Education:

- 8th Grade Or Less
- High School Graduate/GED
- Associate's Degree
- Master's Degree
- 9th-12th Grade
- Some College, No Degree
- Bachelor's Degree
- Doctorate Degree

Birth Mom Prepregnancy Weight: _____ lbs Birth Mom Weight At Delivery: _____ lbs

Number Previous Live Births: _____ Number Previous Child Deaths: _____

Date Of Last Live Birth: _____

Plurality Of Pregnancy With Child Victim:

- Singleton
- Triplets
- Unknown
- Twins
- Other: _____

DATA FROM TEXAS BIRTH CERTIFICATE CONTINUED

Date Of First Prenatal Care Visit: _____ No Prenatal Care

Source Of Prenatal Care:

- | | |
|--|---|
| <input type="checkbox"/> Hospital Clinic | <input type="checkbox"/> Public Health Clinic |
| <input type="checkbox"/> Private Physician | <input type="checkbox"/> Midwife |
| <input type="checkbox"/> None | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Unknown | |

Source Of Payment For Delivery:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Private Insurance | <input type="checkbox"/> Medicaid |
| <input type="checkbox"/> Self-Pay | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Unknown | |

Mother Smoked During Pregnancy: Yes No Unknown

Congenital Abnormalities In Newborn:

- | | |
|---|--|
| <input type="checkbox"/> Meningomyelocele/Spina Bifida | <input type="checkbox"/> Cyanotic Congenital Heart Disease |
| <input type="checkbox"/> Omphalocele/Gastroschisis | <input type="checkbox"/> Down Syndrome |
| <input type="checkbox"/> Suspected Chromosomal Disorder | <input type="checkbox"/> Unknown |

DATA FROM TEXAS DEATH CERTIFICATE

Place Of Death:

- | | |
|--|----------------------------------|
| <input type="checkbox"/> Hospital Inpatient Unit | <input type="checkbox"/> ER |
| <input type="checkbox"/> DOA To Hospital | <input type="checkbox"/> Home |
| <input type="checkbox"/> Other | <input type="checkbox"/> Unknown |

Time Of Death: _____ AM PM Autopsy Performed? Yes No Unknown

Immediate Cause Of Death: _____

Cause Of Death Concluded Based On Autopsy Findings?: Yes No Unknown

Interval Between Immediate Cause Onset And Death: _____

Underlying Cause Of Death: _____

Interval Between Underlying Cause Onset And Death: _____

Manner Of Death:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Natural | <input type="checkbox"/> Accident |
| <input type="checkbox"/> Suicide | <input type="checkbox"/> Homicide |
| <input type="checkbox"/> Pending Investigation | <input type="checkbox"/> Undetermined |
| <input type="checkbox"/> Unknown | |

Other Conditions Contributing To Death: _____

Injury Noted: Yes No Date Of Injury: _____ Time Of Injury: _____ AM PM

Place Of Injury: _____ Describe How Injury Occurred: _____