

**Sacramento County Child Death Review Team
A Twenty Year Analysis of Child Death Data
1990 – 2009**

The following report includes brief descriptions on some of the cases of children who died in Sacramento County between 1990 and 2009, reviewed by the Child Death Review Team. These cases were selected to illustrate the range of circumstances and situations that have placed children at risk. The names have been changed in order to protect the identity of the victim and any family members who were not responsible for the death of the child.

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Through the Eyes of a Child, a Pediatrician, and Back Again

Participation in the monthly Sacramento Child Death Review Team is the most daunting yet important task I perform as a pediatrician. As we review the cases, each child tells a story of how they lived, sometimes with a terrible disease only to succumb too soon in life. Others lived a healthy life only to be suddenly taken by a tragic accidental injury. Still others lived a life of abuse and neglect and were killed by a final fatal blow from a trusted caregiver. Although any child death is tragic, any pediatrician will tell you that for every child that succumbs from a disease or dies from a severe injury, there are many more children who suffer the same disease or injury that do not die. Hence, a clear understanding of the trends in child death in our community becomes a marker for the general health of our pediatric population. And, any health policies or programs that are successfully implemented in our community to reduce child death would not only prevent the death of a handful of children, but would improve the health and well-being of many more children.

Because of many years of dedicated team effort, this year the Sacramento County Child Death Review Team is able to produce a comprehensive Twenty Year Report with data from 1990 through 2009. This report is timely in that it demonstrates the effect of some policy decisions, program implementations and program losses over the years. Before 2000, Sacramento County had one of the highest county infant sleep-related death rates in California. From 2004 through mid-2007, there was a targeted infant safe sleeping campaign in high risk communities with a subsequent 50% reduction in infant sleep-related deaths through 2006. When the funding was cut and the program disappeared, the infant sleep-related death rates rose again. Similarly, child abuse and neglect homicide deaths fluctuate in relationship to enrollment with neighborhood home visitation programs. These evidence-based programs for child abuse and neglect prevention were reduced with recent budget cuts and child abuse and neglect homicides are again on the rise. Interestingly, one program specifically targeted to prevent abusive head trauma (*Shaken Baby Syndrome*) was sustained with funding from the local hospitals and Sacramento County Department of Health and Human Services, Division of Child Protective Services. The resultant dramatic reduction in abusive head trauma deaths has continued since the program's implementation in 2004.

After twenty years of listening to child stories, tabulating data, presenting annual reports, and watching programs and policies come and go, and the wisdom among our Child Death Review Team members, we know what works in our community to prevent many forms of child death. We know how to save the lives of children and how to improve the health and well-being of our pediatric community. As Chairperson of the Sacramento County Child Death Review Team, I challenge the reader, in times of scarce resources for community programs, to invest in prevention programs that are proven to be effective.

Sincerely,



Angela Rosas, M.D.

Medical Director BEAR Program

Sutter Medical Center Sacramento

Sacramento County Child Death Review Team Chairperson (2002-2007 and 2011-Present)

Executive Summary

In 2009, the Sacramento County Child Death Review Team (CDRT) marked its twentieth year investigating, analyzing and documenting the circumstances surrounding all child deaths in Sacramento County. The Sacramento County CDRT is unique in that it investigates, analyzes and reviews the deaths of all children that died in Sacramento County and is not limited to homicides or injury-related deaths. The Sacramento County CDRT finds that a thorough review of all child deaths in this county helps to identify abuse and neglect in cases where it may not have been originally identified. With the major commitment of time and expertise from the comprehensive membership of the CDRT, as well as the Youth Death Review Subcommittee and the Prevention Advisory Committee, these dedicated professionals, and the agencies they represent are able to thoroughly investigate any pertinent case information to come to a consensus on the manner and classification of each child death. Only case specific information obtained from CDRT members is used for the production of this report.

The Sacramento County CDRT has been visited by many counties, as well as the United States Government Accountability Office, with a desire to learn from and replicate Sacramento County's model. Sacramento County's CDRT Report has served Sacramento as a tool for identifying findings and making recommendations for policies, practices, and priorities such as targeted child abuse and neglect prevention programs, prevention education on Shaken Baby Syndrome (abusive head trauma), Infant Safe Sleeping, Motor Vehicle Collisions, drowning, and suicide.

The following report is a synopsis of all child fatalities in Sacramento County during the years 1990 through 2009. Included are descriptions of all deaths, resulting from child abuse and neglect, injuries, homicides or natural causes.

During the twenty year period from 1990 through 2009 there were a total of 3,633 Sacramento County resident child deaths. These deaths included 2,587 (71%) natural deaths, 945 (26%) injury-related deaths and 101 (3%) deaths of an undetermined manner. The overall child death rate during the twenty year time period was 53.20 per 100,000 Sacramento County resident children. The five leading causes of deaths during this time period were: perinatal conditions (1,041); congenital anomalies (581); infant sleep-related deaths (420); homicides (296); and motor vehicle collisions (272). The major findings and trends during this time period include the following:

- ❖ More than one-quarter of all child deaths are preventable.
- ❖ Children under five years of age continue to represent the majority of child deaths, including child abuse and neglect homicides.
- ❖ Biological parents represent the majority of child abuse and neglect homicide perpetrators.
- ❖ African American children are dying at a disproportionate rate across all manner of deaths compared to other race groups.

Child deaths tell us a great deal about the well-being of children in our community. Prevention strategies recommended by the CDRT throughout the twenty years were developed with a sincere awareness of the complexity of challenges facing Sacramento County's children and their families. CDRT recommendations are for the purpose of preventing child deaths and also to protect Sacramento County's children from disease, disfigurement, disability, emotional damage and other long-term effects of child abuse and neglect, accidental injuries and poor health.

A Perspective on Twenty Years of Child Deaths in Sacramento County

First and foremost, I want to thank the hundreds of individuals over the last twenty years who have contributed their time, talents and agency resources to making the Sacramento County Child Death Review Team (CDRT) a stellar accomplishment in our county, with a database that has no equal. Likewise, I want to thank all the policy and program leaders who have used the data and recommendations during this time to implement changes and services that have directly impacted the safety of children.

Child Death Review Teams across the nation were formed primarily for the investigation and prevention of child abuse and neglect fatalities. While this was also true for Sacramento County more than twenty years ago, our team had the foresight to expand the scope to include the deaths of all children birth through 17 years of age, from all manner and causes, making the Sacramento Child Death Review Team one of few willing and able to take on such a large task. The choice has paid off in a wealth of data resulting in policy actions that have impacted child safety and well-being in topics ranging from child abuse prevention programs, drowning prevention programs, car seat safety, infant sleep-related death prevention education, and shaken baby syndrome prevention education, to name a few. Yet, the contents of this twenty year report bring us full circle with findings related to child abuse and neglect that stand out and demand our attention. I share with you some of these findings.

Child Abuse and Neglect (CAN) homicides fluctuate in direct relationship to funding for programs to prevent them. When services are available, CAN Homicides decline. When services are cut or reduced, CAN Homicides increase. From 1999 through 2003, CAN Homicides decreased by approximately 2.6 child deaths per year. During that period, Birth & Beyond Family Resource Centers were formed and fully funded in nine neighborhoods, Nurse Family Partnership began, Black Infant Health was funded by the State, and Child Protective Services provided Family Maintenance Services. From 2003 through 2009, CAN homicides increased by nearly one death per year and the trend line is on the way up. During this time, Birth & Beyond lost one Family Resource Center and experienced decreased funding and ability to serve children older than 5 years of age, Nurse Family Partnership was reduced in scope and funding, Public Health, Mental Health, and an array of social services (public and private) were significantly diminished including a 34% reduction in Child Protective Services. The level of research necessary to prove a causal relationship far exceeds the funding level and purpose of the CDRT. However, the conclusion that effective programs do make a difference is bolstered by the demonstrated impact of other programs in Sacramento County such as car seat safety, shaken baby syndrome, and infant safe sleeping education programs that, when funded, have also resulted in significant reductions in child deaths.

A child abuse and neglect history in the family is the most frequent known risk factor present in the history of all Sacramento County children who die, from both natural and injury-related causes. The CDRT, through its member's records, identifies those risk factors that are known through services, treatment, investigations, arrests or other records specific to each family. These recorded levels are likely conservative because they are based on agency records. Many families and their risks remain undetected. Yet, a history of child abuse and neglect was present in the following percentages of child fatalities by category: 23% of all deaths, 35% of CAN Homicides, 36% of Third Party Homicides, 23% of all preventable deaths, 22% of perinatal condition deaths, 22% of infant deaths, and 15% of suicides. These percentages often exceed those of any other risk factor including, but not limited to, substance abuse, violent and/or non-violent crime, domestic violence, and gang

membership. This finding indicates that continued contact and support for families with a Child Protective Services history is warranted to protect children born into these families.

Major Findings

Major findings and highlights of Sacramento County resident child deaths from 1990 through 2009 are as follows:

- **With minor fluctuations over the past twenty years, the leading causes of death have primarily been in five categories of death.**

Perinatal conditions, congenital anomalies, Sudden Infant Death Syndrome (SIDS)/ Sudden Unexpected Infant Death Syndrome (SUIDS), homicides, and Motor Vehicle Collisions (MVC) over the course of twenty years have often been the leading categories of death in Sacramento County resident children. Of the 3,633 child deaths since 1990, there have been 1,041 (29%) deaths due to perinatal conditions, 581 (16%) due to congenital anomalies, 420 (12%) infant sleep-related deaths, including SIDS/SUIDS, infant sleep-related deaths of an undetermined manner and infant sleep-related deaths in “other” categories, 296 (8%) due to homicides, and 272 (7%) due to MVCs.

- **Nearly half of all Sacramento County resident children, regardless of the category of death (natural or injury-related), who die have themselves or within their families a known risk factor.**

From 1990 through 2009, 44% of Sacramento County resident child deaths, regardless of the category of death (natural or injury-related), had a known risk factor present themselves or in their family history. Risk factors include a history of child abuse and/or neglect, substance abuse, violence and/or crime: 64% of CAN Homicides, 43% of perinatal conditions, 41% of infant deaths, 26% of suicides, and 21% of congenital anomalies. These families have come into contact with at least one agency for services or through the criminal justice system prior to the death of the child.

- **There were 158 Child Abuse and Neglect homicide deaths from 1990 through 2009.**

Over the past twenty years, there were 296 homicides of Sacramento County child residents of which 158 (53%) were CAN homicides. When comparing the first decade to the second decade, there were more CAN homicides in the time period between 1990 through 1999 (99 or 63%) as there were in the time period between 2000 and 2009 (59 or 37%). Fifty-one percent (80) of the 158 CAN homicide decedents from 1990 through 2009 were male and 49% (78) were female. Caucasian children represent the majority of CAN homicide decedents at 39%, followed by African American children at 30% and Hispanic children at 15%.

➤ **The majority of Child Abuse and Neglect homicide deaths occurred in children 4 years of age and younger.**

Of the 158 Child Abuse and Neglect (CAN) homicide decedents from 1990 through 2009, 119 (75%) were infants (41) and children 1 through 4 years of age (78).

➤ **The majority of perpetrators of Child Abuse and Neglect homicides in Sacramento County are biological parents.**

From 1990 through 2009, the majority of perpetrators of Child Abuse and Neglect (CAN) homicides were the biological parent(s) of the decedent. This includes the mother or father acting alone, or both parents acting together. During this time period, there were 158 CAN homicides with 161 perpetrators¹, of which 60% (97 of 161) were the biological parent(s) of the decedent.

➤ **Youth 15 to 17 years of age are the most likely victims of injury-related deaths such as Motor Vehicle Collisions, suicides, and third-party homicides.**

From 1990 through 2009, there were 945 injury-related Sacramento County resident child deaths. Of the 945, 315 (33%) were in youth between 15 and 17 years of age. Of the 945 injury-related deaths, there were 272 Motor Vehicle Collisions (MVC), of which 41% (112) were youth between 15 and 17 years of age. Of the 945 injury-related deaths, there were 90 suicides, of which 70% (63) were youth between 15 and 17 years of age. Of the 945 injury-related deaths, there were 138 third-party homicides, of which 69.5% (96) were youth between 15 and 17 years of age.

➤ **African American children died at a rate two times higher than Caucasian children in Sacramento County.**

During the twenty years, African American children have consistently died at a disproportionate rate of 102.0 per 100,000 children compared to Caucasian children who died at a rate of 48.5 per 100,000 children. Of the 3,633 child deaths since 1990, African American children accounted for 22% (816) of child deaths and 12% of the child population. This finding is currently being addressed by the *Sacramento County Blue Ribbon Commission on Racial Disparity*.

➤ **While general geographic locations within Sacramento County continue to be high risk areas for child deaths, newly emerging areas of concern have developed.**

Particular geographic locations within Sacramento County have remained high risk areas for child deaths, such as the Arden Arcade, Del Paso Heights, Fruitridge, North Highlands, North Sacramento, Oak Park, and South Sacramento neighborhoods. However, emerging areas of concern, particularly for child homicides, have developed. These neighborhoods include Citrus Heights, the Elk Grove/Laguna/Sheldon/Bruceville region, Fair Oaks,

¹ The total number of perpetrators exceeds the total number of CAN homicides, because in some cases more than one perpetrator was involved in the death of a child.

Orangevale, and Natomas, where child homicides have been more prominent from 2000 through 2009 relative to the previous decade².

➤ **Since 2004, third-party homicides have begun to decrease at a rate of 1.5 deaths per year.**

In the period between 1990 and 1995 there is an increase in the frequency of third-party homicides of approximately 0.89 deaths per year. Between 1995 and 1999 there is a significant decrease in third-party deaths of nearly 2 victims per year. The decrease was followed by an increase, averaging approximately 1.5 victims per year, between 1999 and 2004. Between 2004 and 2009 the trend has shown a decline in third-party homicides at an average rate of approximately 1.5 victims per year. While this does not represent a conclusive or ongoing change, it is positive.

➤ **When in place, public education and targeted interventions aimed at modifiable adult behaviors and risk factors have decreased the number of certain categories of death.**

From 2003 to 2006, the number of infant sleep-related deaths decreased by nearly half. Concurrently, from 2004 through mid-2007 there was a marked increase in public education campaigns focusing on the importance of infant safe sleeping in specific zip codes with the highest rates of infant sleep-related deaths. In mid-2007, some of these infant safe sleeping programs had ended. This coincided with an increase in infant sleep-related deaths in the same zip codes.

➤ **Motor Vehicle Collision deaths among children 8 years of age and younger have decreased in the decade from 2000 through 2009 compared to 1990 through 1999.**

From 1990 through 2009, 28% of Motor Vehicle Collision (MVC) decedents (75 of 272) were 8 years of age and under. Of the 75 decedents age 8 and under, 60 (80%) were in the time period between 1990 and 1999 and 20% (15) were between 2000 and 2009. In 1999, legislation was passed increasing the age and weight requirements for children to be properly secured in a booster seat in the back seat of a moving vehicle. In Sacramento County, the National Highway Traffic Safety Administration's (NHTSA) best practice protocols requiring all children through 8 years of age or 4'9" to remain in a booster seat while being a passenger in a moving motor vehicle were promoted through targeted education by fire departments, hospitals, the California Highway Patrol (CHP) and community based organizations.

With such a wealth of data as this report provides it is easy to get lost in the data and fail to act. That course would negate the work of twenty years of hundreds of professionals who have dedicated time and resources to build the database. More importantly, it would dismiss the lives lost that could have been saved.

Returning to our roots of child abuse and neglect prevention, the simple fact is that we know what to do. We know who the most at-risk children are, who the most likely perpetrators are, the communities most at risk, and the programs and services that have demonstrated an impact on CAN

² Neighborhoods are listed in alphabetical order

homicides. We also know that child abuse and neglect is the most significant risk factor in other natural and injury-related deaths. In a time of scarce resources, it is a unique situation to be able to pinpoint a solution. I believe it is a moral imperative. With information comes, not only power, but obligation.

With gratitude,



Sheila Boxley
President & CEO
Child Abuse Prevention Center

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Based upon the direction and feedback of the Child Death Review Team (CDRT), Youth Death Review Subcommittee (YDRS), and the Prevention Advisory Committee (PAC), Joey Lidgett and Nazia Ali-Prasad of the Child Abuse Prevention Council of Sacramento were responsible for data analysis, demographic descriptions, and the production of the document as it is presented herein. Stephanie Biegler and Gina Roberson, M.S. of the Child Abuse Prevention Council of Sacramento provided overall supervision of staff and the production of this document. A full list of CDRT representatives, both past and present, and the agencies they represent can be found in the appendix in the back of this report.

Chapter I

Child Homicides

Chapter One

Child Homicides

Six month old Connor, like most infants, lived a care-free life. His mother primarily took care of him and his day to day needs. However, while at work, his father would watch over him. Often Conner and his father would play together. However, every once in a while Conner's father would get frustrated by his cries and constant need for attention. One day, Connor frustrated his father so much so, that it ended his short life. Connor's father claimed to have played "airplane" with his son, lifting him slowly up and down in the air. The Coroner's report conflicted with the father's story and discovered non-accidental trauma deemed to have been abusive head trauma (shaken baby syndrome). Tragically, his extensive injuries, including retinal hemorrhages, anoxic brain injury, vomiting, and high blood pressure resulted in his death.

Overview

The primary function of the Sacramento County Child Death Review Team (CDRT) is to identify how and why children die in order to facilitate the creation and implementation of strategies to prevent child deaths. In accordance with these goals the CDRT has accumulated twenty years of data that describe victims, perpetrators and circumstances related to instances of abuse and neglect. To prevent future instances of child abuse and neglect, the CDRT uses information gleaned to create recommendations and to promote data driven policy and program improvements.

Over the past twenty years, from 1990 through 2009 there were a total of 3,633 child deaths. Of all child deaths, 26% (945 of 3,633) were injury-related. Of the injury-related deaths, 31% (296 of 945) were the result of homicide. Homicides are segregated into two main categories: child abuse and neglect homicides and third-party homicides, and are defined as follows:

Child Abuse and Neglect (CAN) Homicide: A homicide where the perpetrator was the primary caregiver. A death in which a child is killed, either directly, or indirectly, by their caregiver.

Third-Party Homicide: A homicide where the perpetrator was not the primary caregiver. A third-party homicide is the killing of a human being by another human being with or without malice aforethought. This can include crimes such as driving under the influence of alcohol causing a fatal accident resulting in a death of a child.

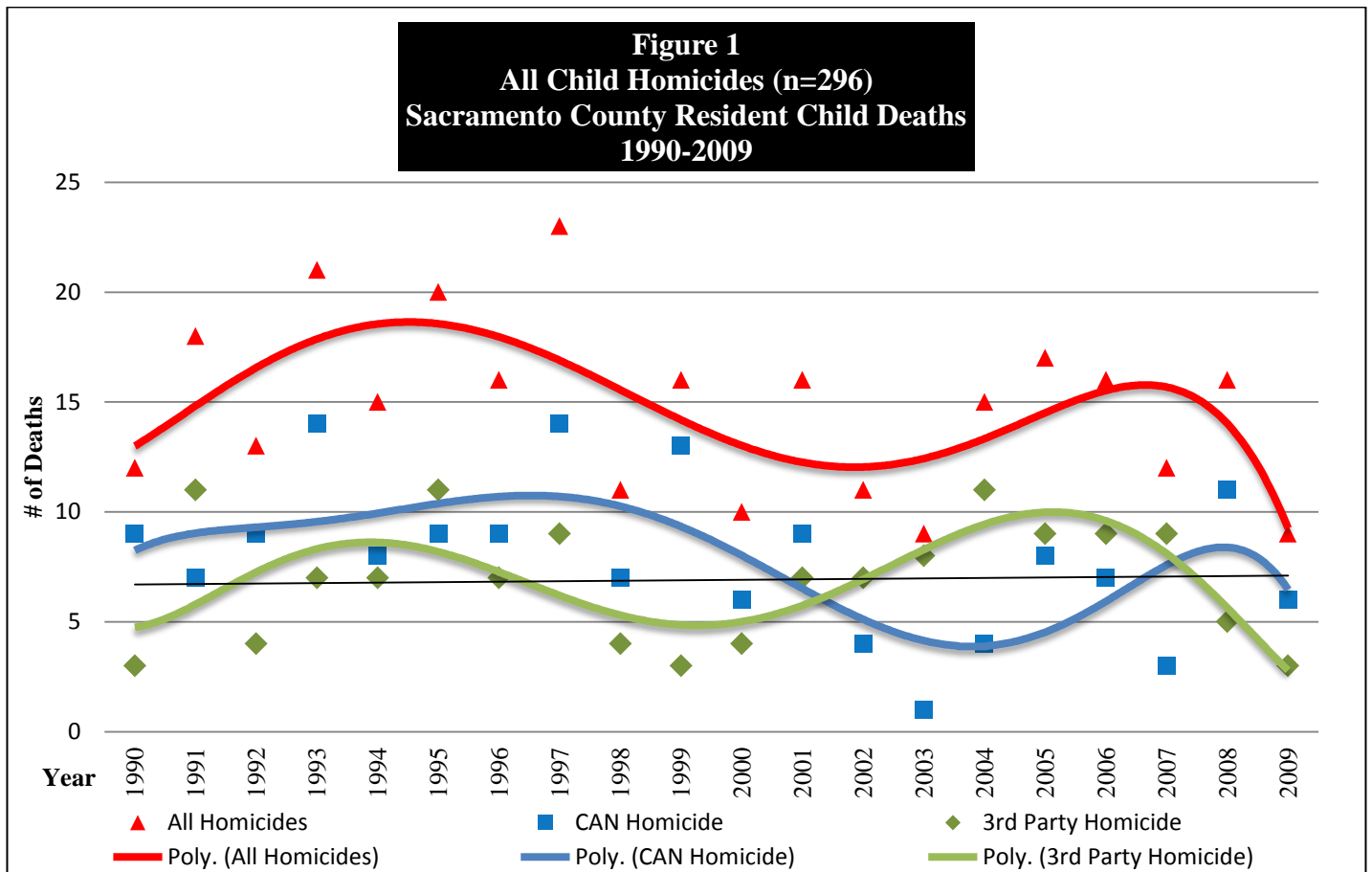
The distinction between the two categories of homicide is rooted in the nature of the perpetrator. Decedents killed by a person who is the primary caregiver of the child at the time of death are considered to be victims of CAN homicide. When the perpetrator is not the primary caregiver, the decedent is considered to be a victim of third-party homicide. The CDRT reviews each case carefully to ensure that each case is correctly categorized. Third-party homicide may include cases where a family member is the perpetrator only when that family member is not acting as the primary caregiver.

Of the 296 homicides from 1990 through 2009, 158 (53%) were CAN homicides and 138 (47%) were third-party homicides. Figure 1 shows the frequency and trend line analysis from 1990 through 2009 for all child homicides, CAN homicides only and third-party homicides only. The

data shows a higher frequency of child homicide in the mid-1990's with a maximum of 23 deaths in 1997. Overall, child homicide frequency reached a twenty year minimum in 2003 with only eight deaths. This decrease was followed by an increasing frequency, which reached a maximum in 2005 with 17 child homicides.

CAN homicides were elevated with an average frequency of ten deaths per year between 1990 and 1999. CAN homicides fell from 13 in 1999 to one in 2003, the lowest CAN homicide level in the twenty year period. Since 2003, CAN homicides have increased continuously, reaching a maximum of 11 deaths in 2008.

From 1990 through 1997 third-party homicides were elevated with an average frequency of eight deaths per year and a maximum of 11 deaths in 1991 and 1995. Third-party homicides fell from 1997 to 1999, reaching a minimum in 1999 with 3 deaths. Third-party homicides rose from three in 1999 to 11 in 2004. Since 2004, third-party homicides have been on the decline, falling from 11 in 2004 to three in 2009.



Child Abuse and Neglect Homicides and Third-Party Homicides

All homicides share a common element of intentional injury. Beyond this common characteristic, CAN homicides and third-party homicides display quite different trends. Between 1990 and 1999 frequency of these events was similar, increasing from 1990 until the mid-1990's and decreasing in

the late 1990s. However, starting in 1999 the two diverge with CAN homicides decreasing between 1999 and 2003 while third-party homicides increased between 1999 and 2005. The inverse correlation is most notable at two points where the frequency trend line of CAN homicides intersects with that of third-party homicides. This occurs in 2002 when CAN homicide frequency dropped below third-party homicides and again in 2008 when CAN homicides rose above third-party homicides.

Child Homicide Mechanism

Table A details the mechanism of death for all homicides from 1990 through 2009. Among all child homicides the most common mechanism of death was by firearm, representing 43% (128 of 296) of all homicide deaths. Firearm homicide deaths represented 75% (103 of 138) of all third-party homicides, making it the most frequent mechanism of death for this category. Of the third-party homicides by firearm, 80% (82 of 103) of decedents were between 10 and 17 years of age.

The second most common mechanism of homicide was battering/beating with 17% (50 of 296) of all child homicide deaths. Battering/beating homicide deaths represented 28% (44 of 158) of CAN homicides, making it the most frequent mechanism of death for this category. Of the CAN homicides by battering/beating 100% (44 of 44) of decedents were infants and children 1 through 4 years of age.

Mechanism of Death	# CAN	% CAN	#Third-Party	%Third-Party	# Total	% Total
Firearm	25	16%	103	75%	128	43%
Battering/Beating	44	28%	6	4%	50	17%
Shaking/Abusive Head Trauma	21	13%	0	0%	21	7%
Other	12	8%	7	5%	19	6.5%
Stabbing	6	4%	11	8%	17	6%
Suffocation/Strangulation	16	10%	0	0%	16.5	5.5%
Chronic Neglect	14	9%	0	0%	14	5%
Vehicular	0	0%	10	7%	10	3%
Poisoning/Overdose	8	5%	0	0%	8	3%
Drowning	7	4%	0	0%	7	2%
Unknown	5	3%	1	1%	6	2%
Total	158	100%	138	100%	296	100%

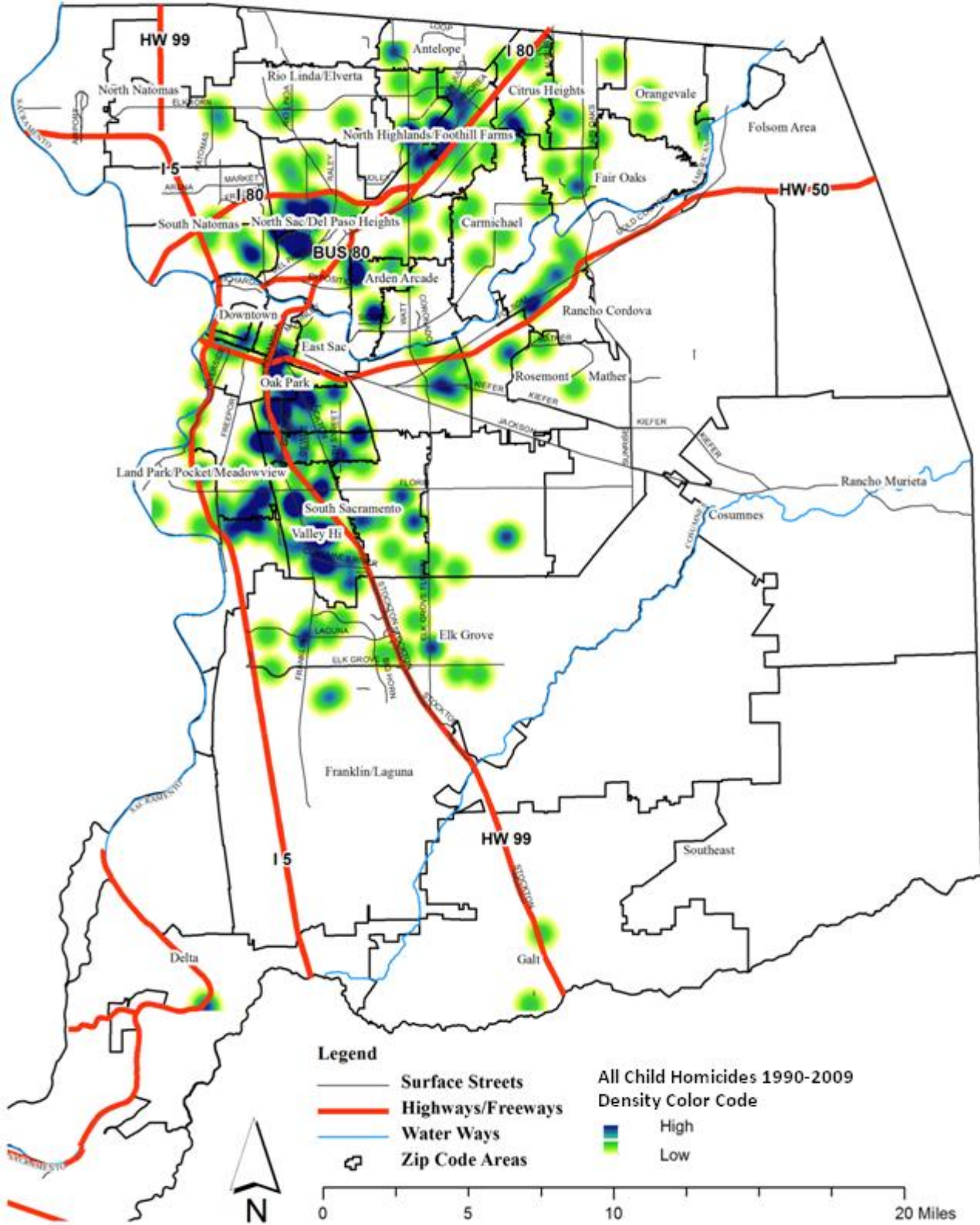
Geographic Distribution

Often data in Sacramento County is analyzed by zip code. The details of zip code data can be found in Table Q in the back of this report. Although zip code analysis can be useful, it does not take into account the size differential within zip codes. To better understand where homicides occur in

Sacramento County, Map i. shows the areas of highest (dark red) and lowest (purple/clear) incident occurrences between 1990 and 2009 using Kernel Density Distribution analysis. This density analysis highlights areas using color codes to identify where child homicides are more frequent within a radius of approximately two miles. Homicides occur across the county with concentration in specific areas. The frequency of all child homicides (CAN and third-party homicides) is denser in the following neighborhoods: Arden Arcade, Citrus Heights, Del Paso Heights, Elk Grove/Laguna/Sheldon/Bruceville region, Fair Oaks, Fruitridge, Natomas, North Highlands, North Sacramento, Oak Park, Orangevale, and South Sacramento³.

³ Neighborhoods are listed in alphabetical order

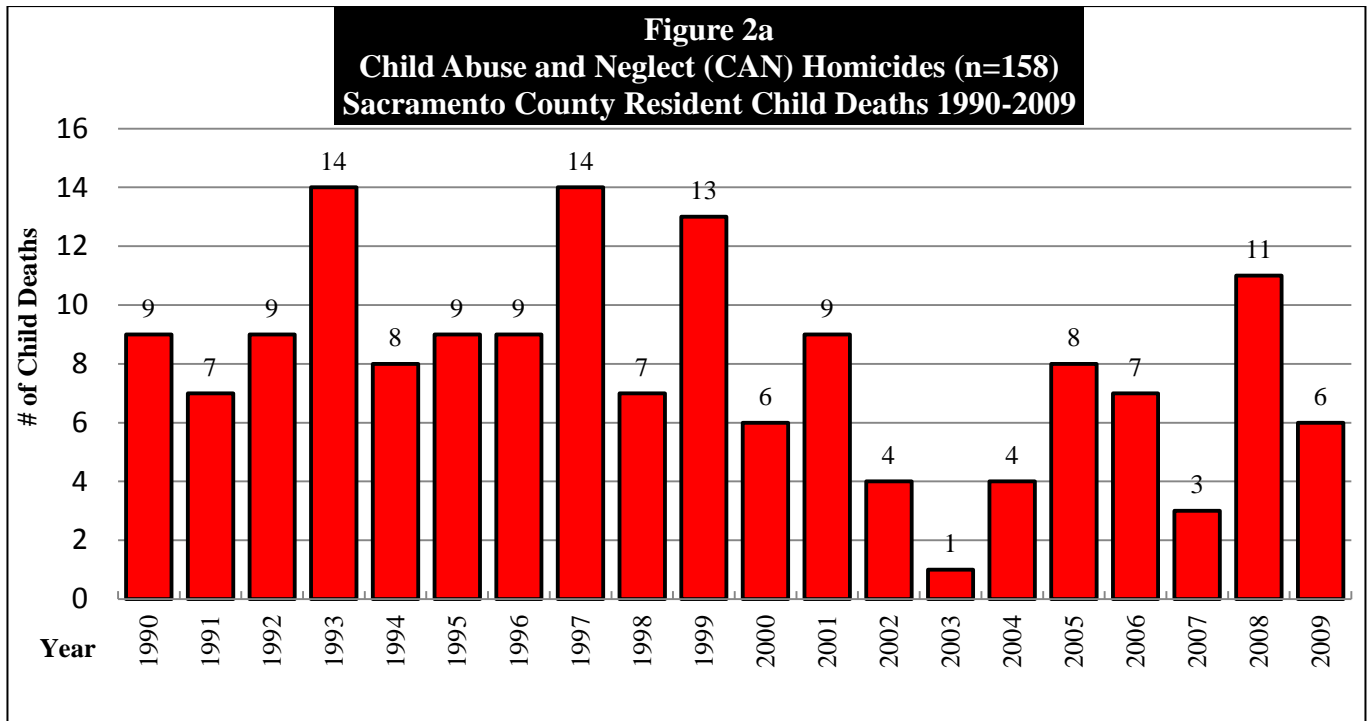
Map i
Child Homicides
Kernel Density Distribution of Sacramento County Resident Child Deaths
1990-2009



Child Abuse and Neglect Homicides

For the Sacramento County CDRT, Child Abuse and Neglect (CAN) homicides are among the most critical to investigate and statistically analyze.

Between 1990 and 2009 there were 296 homicides of Sacramento County child residents of which 158 (53%) were CAN homicides. Figure 2a shows the number of CAN homicides for each year from 1990 through 2009.



Between 1990 and 1999 there was a total of 99 CAN homicides, representing 63% of all CAN homicides in the entire twenty year period. Between 2000 and 2009 there was a total of 59 CAN homicides, representing 37% of all CAN homicides in the twenty year period. This is shown in Figure 2b.

Figure 2b
CAN Homicide Twenty Year Total by Decade (n=158)
Sacramento County Resident Child Deaths 1990-2009

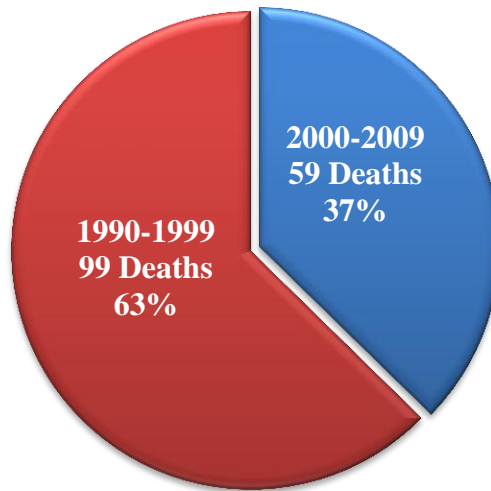
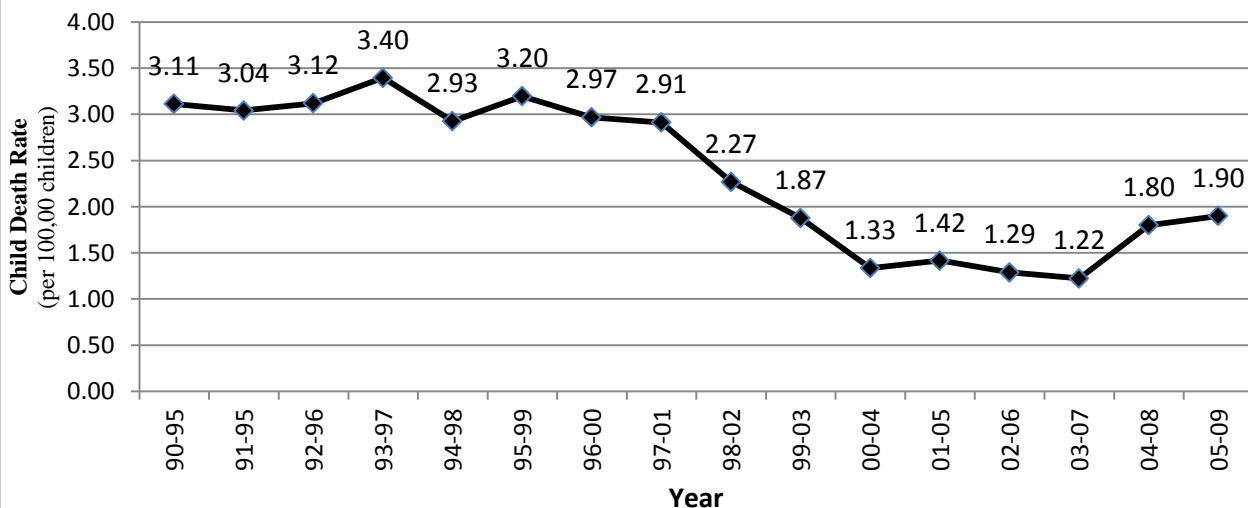
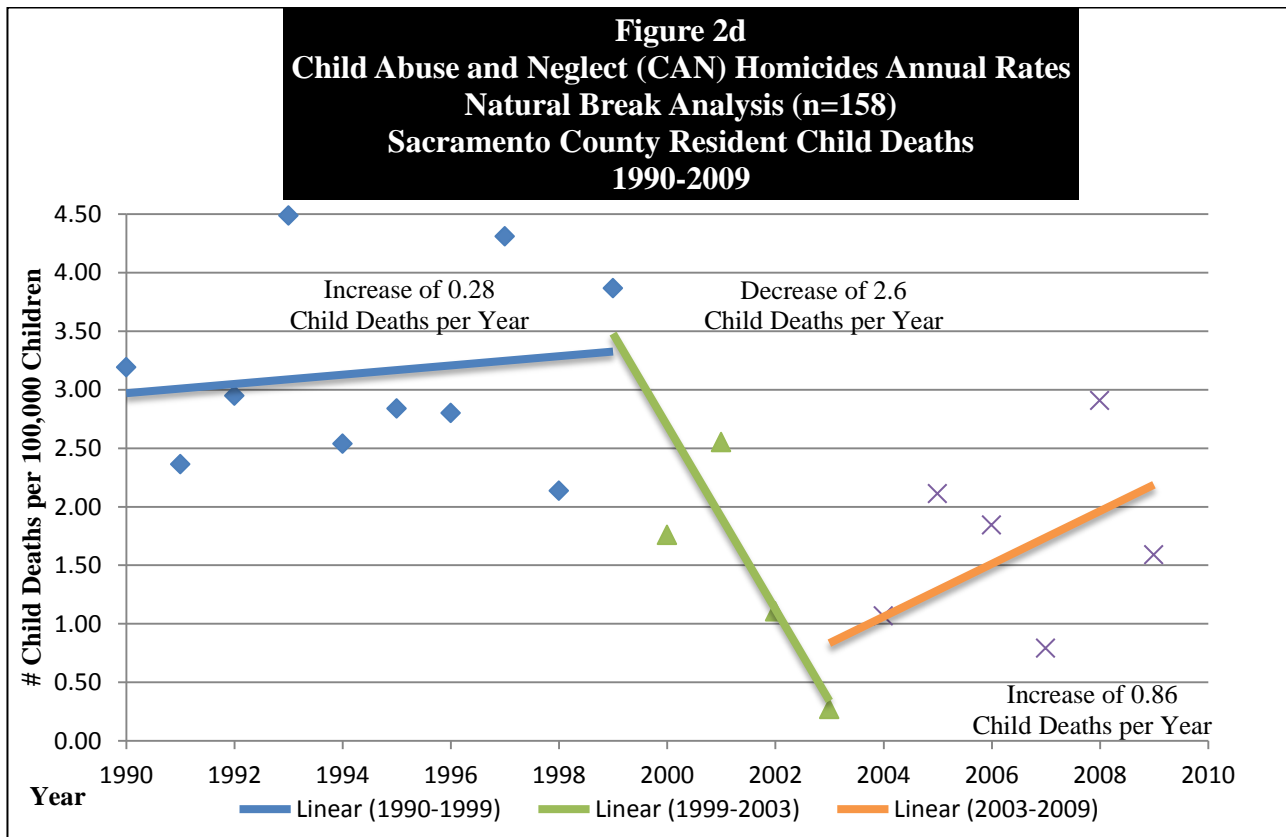


Figure 2c illustrates the number of CAN homicides as five-year rolling averages of rates from 1990 through 2009. Using rolling five-year averages of rates makes it easier to depict CAN Homicide trends overtime. There was a statistically significant decrease in CAN homicides between the rolling five-year periods from 1997 through 2001 and 2003 through 2007. Between the 2003 through 2007 and 2005 through 2009 rolling five-year periods there was an increase in CAN homicides.

Figure 2c
Child Abuse and Neglect (CAN) Homicides
Sacramento County Resident Child Deaths
Rolling Five-Year Average of Rates (n=158)
1990-2009



Using natural break points in the data, Figure 2d shows linear trends in CAN homicides during distinct time periods between 1990 and 2009. Natural breaks in data trends are those critical points where the slope or curve of the distribution changes direction, either up or down. There are two noted natural breaks in the data for CAN homicides, one in 1999 and the other in 2003. At these points the overall slope of the data distribution changed downward and then upward respectively. In the period between 1990 and 1999 there is significant variation in the frequency of CAN homicides with an overall average increase in the frequency of CAN homicides by approximately 0.28 child deaths per year. Between 1999 and 2003 there is a significant decrease in CAN homicides, as noted above. The decrease during this period was found to be approximately 2.6 deaths per year. Analysis between 2003 and 2009 shows that the rate of CAN homicides is on the rise by nearly one child death (0.86) each year.



Risk Factors

In order to detect trends and form prevention strategies at a local level, the CDRT investigates the family environments of all children who die in Sacramento County. Risk factors is the broad term used to describe a variety of social, economic, and/or demographic circumstances or other elements that may be associated with a higher risk of negative health outcomes for children. Evidence of risk factors or family stressors such as substance abuse, prior child abuse, domestic or other violence, and mental illness are collected by CDRT members in preparation for each review

The following information was known for the 158 CAN homicides from 1990 through 2009. At least one risk factor was present in 64% (101 of 158) of the CAN homicides and are as follows⁴:

- ❖ 55 decedents (35%) had family history of abuse and neglect on the decedent or a sibling
- ❖ 47 decedents (30%) had family history of alcohol and drug use
 - 24 decedents (15%) had drug or alcohol involvement at the time of death
- ❖ 40 decedents (25%) had family history of violent crime including domestic violence
- ❖ 15 decedents (10%) had a family history of mental illness

Child Protective Services Involvement

Of the many agencies that serve on the Sacramento County CDRT, Child Protective Services (CPS) is the only agency with a state mandate to protect children from abuse and neglect. For this purpose, in 2004 Sacramento County's CDRT began collecting more detailed information on CPS involvement with CAN homicide decedents and their families. This information has played a crucial role in identifying known risk factors, such as abuse and/or neglect amongst Sacramento County's resident children and their families.

Between 2004 and 2009, there were 1,033 child deaths in Sacramento County. Twenty-four percent (244 of 1,033) of all child deaths during this time period were injury-related. Of those injury-related deaths, 16% (39 of 244) were the result of Child Abuse and Neglect (CAN) homicides. Of the 39 CAN homicide decedents, 62% (24 of 39) had involvement with a Child Protective Services (CPS) agency prior to their death. Of the 24, 17 decedents (71%) had involvement with Sacramento County CPS. Nine of the 17 decedents (53%) with Sacramento County CPS involvement had cases that were open and closed prior to six months before their deaths. Six of the 17 decedents (35%) had a Sacramento County CPS case open at the time of their death.

⁴ The total number of risk factors exceeds the number of CAN homicide deaths with risk factors, because in some child deaths more than one risk factor is present.

Geographic Distribution

Of the 158 CAN homicides from 1990 through 2009, 109 (69%) are from six primary neighborhoods and 16 zip codes. Table B reflects the number of CAN homicides from the first decade (1990-1999) and the second decade (2000-2009) by the top six neighborhoods and zip codes. There was a decrease in four of the six neighborhoods from the first decade to the second decade. Coincidentally, those same areas are where Birth & Beyond Family Resource Centers and Nurse Family Partnership child abuse and neglect prevention programs are located. There was an increase in two of the six neighborhoods, one of which does not have a child abuse and neglect prevention/intervention program currently in place. A table reflecting all CAN homicides by individual zip code can be found in Table Q in the back of this report.

Table B				
Top 6 Neighborhoods <u>Combined</u> for CAN Homicides (n=109)				
1990-1999 and 2000-2009				
Neighborhood	Zip Code(s)	# of CANS 1990-1999	# of CANS 2000-2009	Total # of CANS 1990-2009
South Sacramento (Valley Hi/ Meadowview/ Florin)	95822	5	2	7
	95823	8	11	19
	95828	4	3	7
	Total	17	16	33
North Highlands	95660	9	2	11
	95842	6	3	9
	Total	15	5	20
North Sacramento/ Del Paso Heights/ Hagginwood	95815	9	0	9
	95838	5	2	7
	Total	14	2	16
Citrus Heights/ Orangevale/ Fair Oaks	95662	0	3	3
	95628	1	2	3
	95621	3	3	6
	95610	1	1	2
	Total	5	9	14
Fruitridge/ Stockton Blvd	95820	2	5	7
	95824	3	3	6
	Total	5	8	13
Arden Arcade	95825	4	3	7
	95821	4	1	5
	95864	0	1	1
	Total	8	5	13
	Grand Total	64	45	109

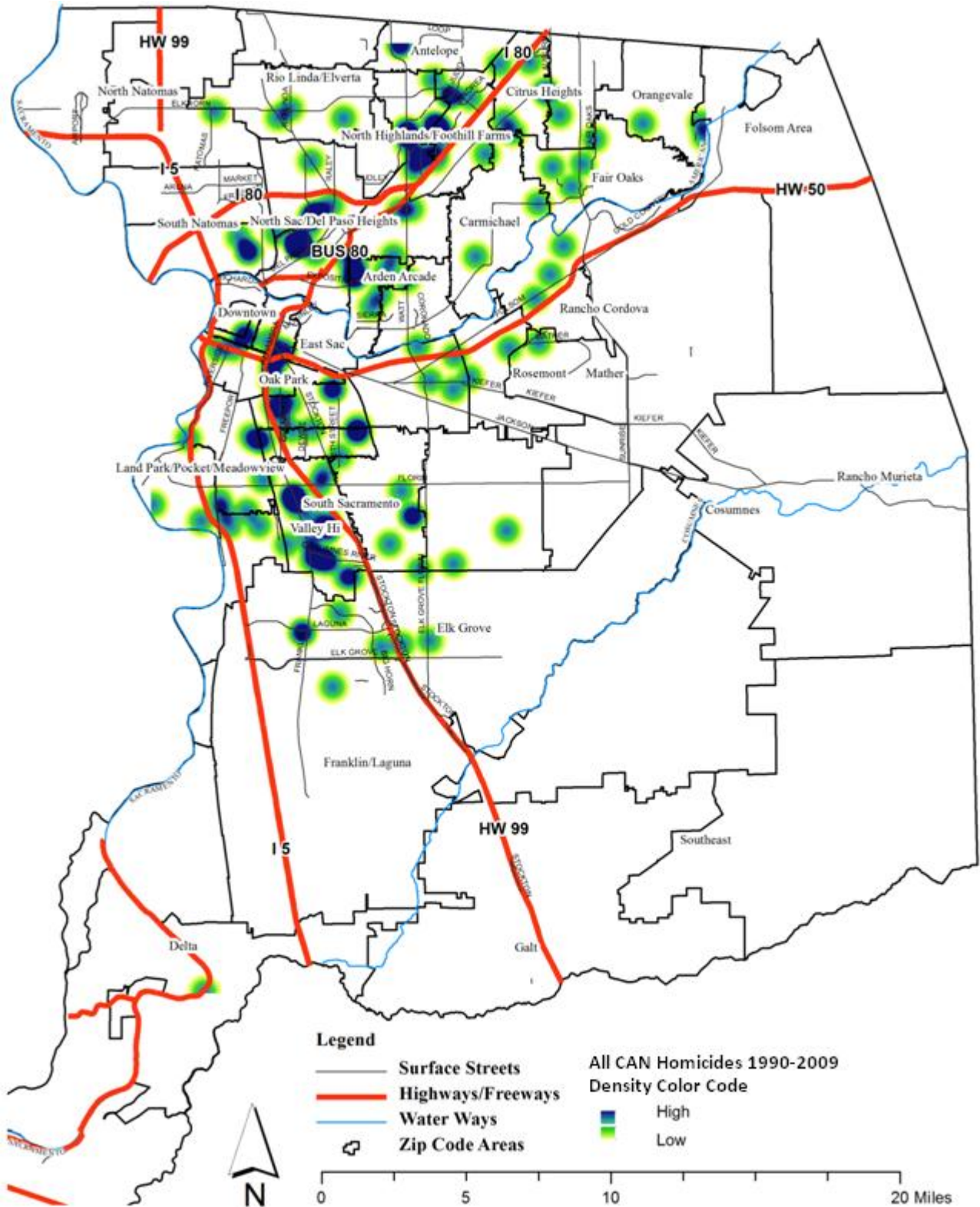
Although zip code analysis can be useful, it does not take into account the size differential within various zip codes. To better understand where CAN homicides occurred in Sacramento County,

Map ii indicates the areas of highest (dark blue) and lowest (yellow/clear) incident occurrence using Kernel Density analysis. This density analysis highlights areas using color codes to identify where CAN homicides are more frequent within a radius of approximately two miles. Neighborhoods with the highest frequency include Arden Arcade, Del Paso Heights, Fruitridge, North Highlands, North Sacramento, Oak Park, and South Sacramento⁵.

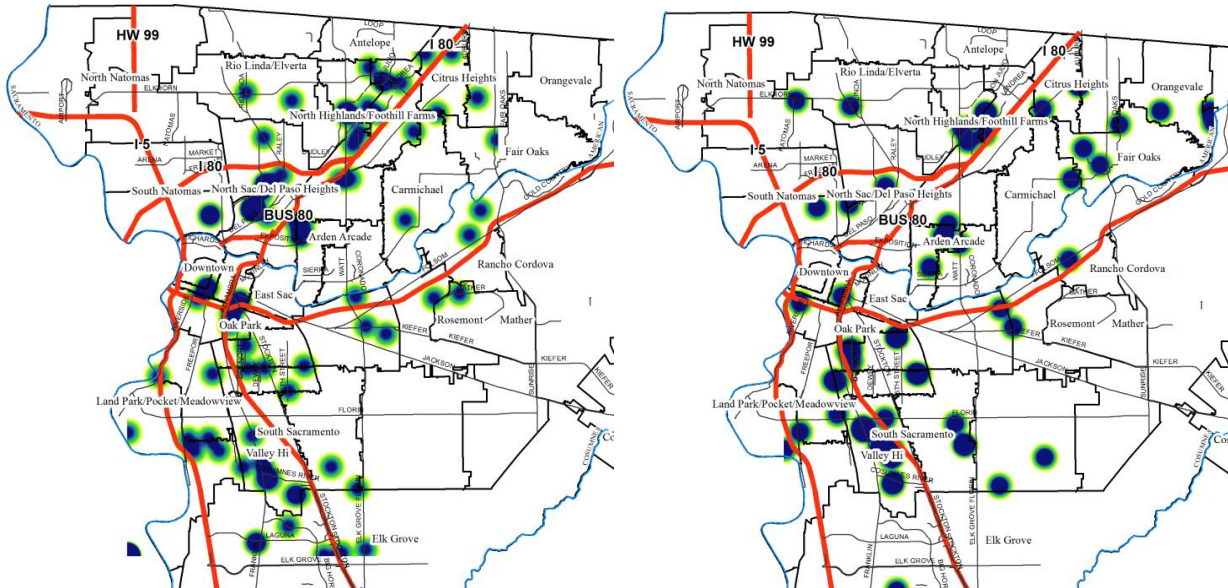
Map iii shows a comparison of CAN homicide distribution from 1990 through 1999 and 2000 through 2009. Although there are many similarities in the distribution of CAN homicides across the two decades there are also notable shifts and the emergence of new areas of CAN homicide density throughout the county. Cirtus Heights, Fair Oaks and Orangevale are much more prominent from 2000 through 2009 relative to the previous decade. North Highlands and North Sacramento/Del Paso Heights are less prominent.

⁵ Neighborhoods are listed in alphabetical order

Map ii
Child Abuse and Neglect (CAN) Homicides
Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Map iii
Child Abuse and Neglect (CAN) Homicides
Kernel Density Distribution of Sacramento County Resident Child Deaths
Left Map 1990- 1999; Right Map 2000-2009

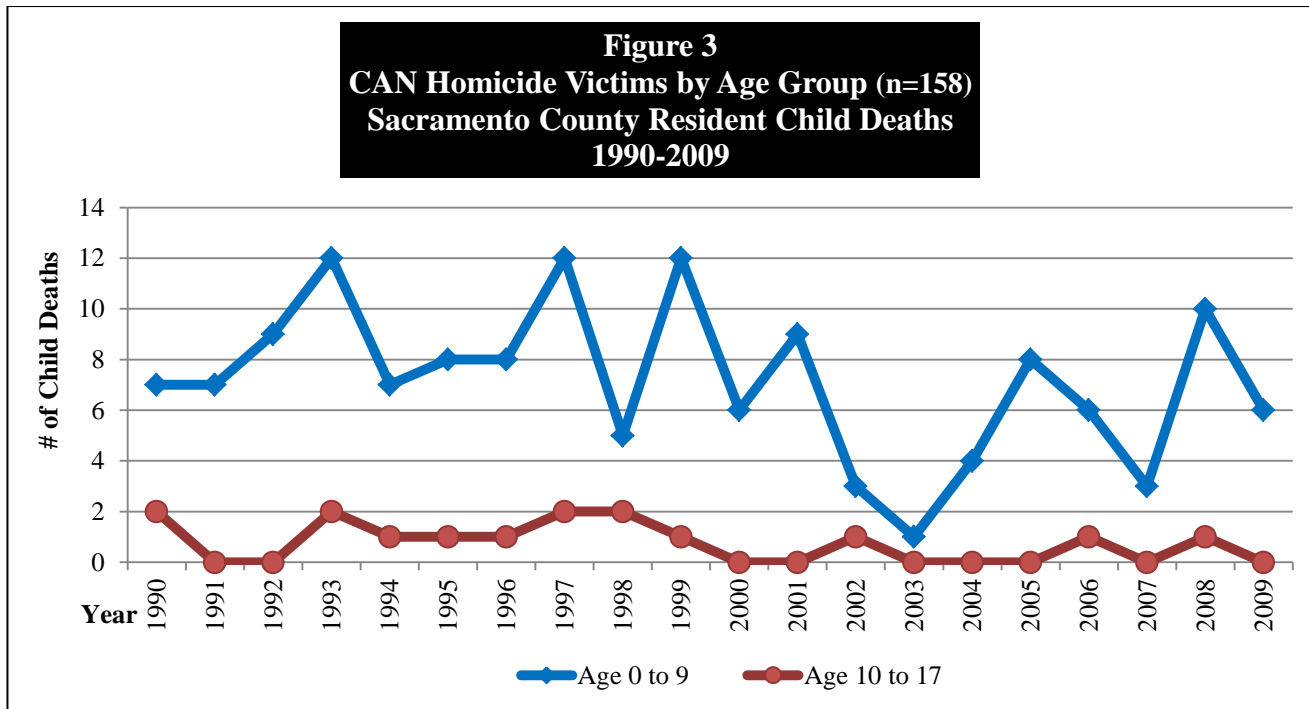


Victim Demographics

Of the 158 CAN homicides during the twenty year time period, 51% (80) of the victims were male and 49% (78) were female. Table C details the age of CAN homicide victims at the time of their death and Figure 3 shows CAN homicides by age group. Data in both Table C and Figure 3 shows that infants (26%) and children between 1 and 4 years of age (49%) together account for 75% of all CAN homicides. These same age groups together comprise only 28% of the Sacramento County general child population.

Table C CAN Homicides (n=158) Sacramento County Resident Child Deaths by Age Category 1990-2009			
Child Age Category	# CAN Homicides	% CAN Homicides	% Child Population (90-09) ⁶
Infant	41	25.9%	6%
1-4	78	49.4%	22%
5-9	24	15.2%	28%
10-14	8	5.1%	28%
15-17	7	4.4%	16%
Total	158	100%	100%

⁶ Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011



As shown in Table D, Caucasian children represent the majority of CAN homicide deaths at 39%, followed by African American children at 30% and Hispanic children at 15%. Although Caucasian children represent the majority of CAN homicide deaths, African American victims, representing 30% of CAN homicide deaths, are disproportionately represented relative to their representation in the general child population (12%).

Race Classification	# CAN Homicide Victims	% CAN Homicides	% Child Population (90-09) ⁷
African American	48	30%	12%
Asian/Pacific Islander	16	10%	13%
Caucasian	62	39%	48%*
Hispanic	23	15%	22%
Multi-Racial***	5	3%	4%
Other	4	3%	1%**
Total	158	100%	100

*Includes other and unknown races as reported by data source

** Native American

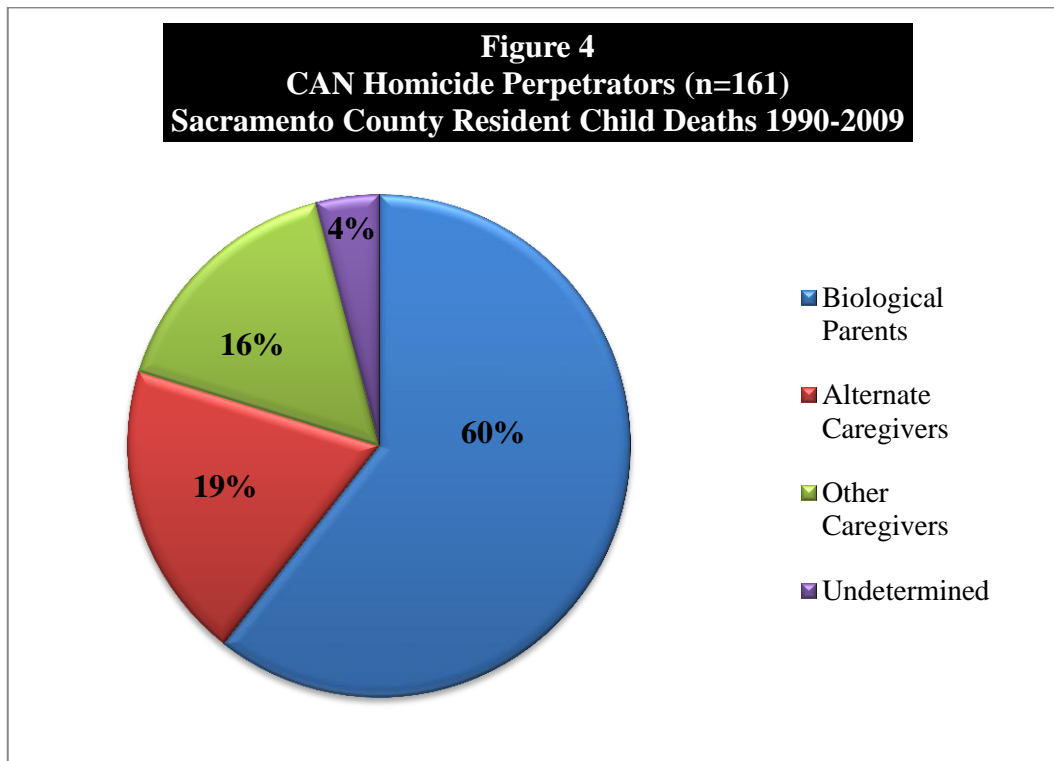
*** Multi-racial data collection was started in 2003 by the CDRT and Public Health

⁷ Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011

Perpetrators

From 1990 through 2009, the majority of perpetrators of CAN homicides were the biological parent(s) of the decedent, as shown in Figure 4. This includes the mother or father acting alone, or both parents acting together. During this time period, there were 158 CAN homicides with 161 perpetrators⁸, of which 60% (97 of 161) were the biological parent(s) of the decedent.

During this same time period, alternate caregivers, such as stepparents, foster/adoptive parents, and boyfriend/girlfriend of a biological parent, comprised 19% (31 of 161) of the perpetrators of CAN homicides. Sixteen percent (26 of 161) of perpetrators were other caregivers not included in previous categories including other caretakers, other family members, babysitters, and family friends. The remaining four percent (7 of 161) of perpetrators were undetermined. An undetermined perpetrator is assigned to a homicide if insufficient perpetrator information was available or known.



Third-Party Homicides

Third-party child homicides are committed by a non-caregiver. Examples include neighbors, strangers and friends. During the twenty year period, there were 296 homicides of Sacramento County child residents of which 138 (47%) were third-party homicides. Figure 5a shows the number of third-party homicides by year from 1990 through 2009. Significant detail regarding third-party homicide is provided in this chapter, however additional information pertaining to

⁸ The total number of perpetrators exceeds the total number of CAN homicides, because in some cases more than one perpetrator was involved in the death of a child.

victims of third-party homicide between 10 and 17 years of age (which comprised 89% of all third-party homicide victims) is in the Youth Death section of Chapter III Demographics.

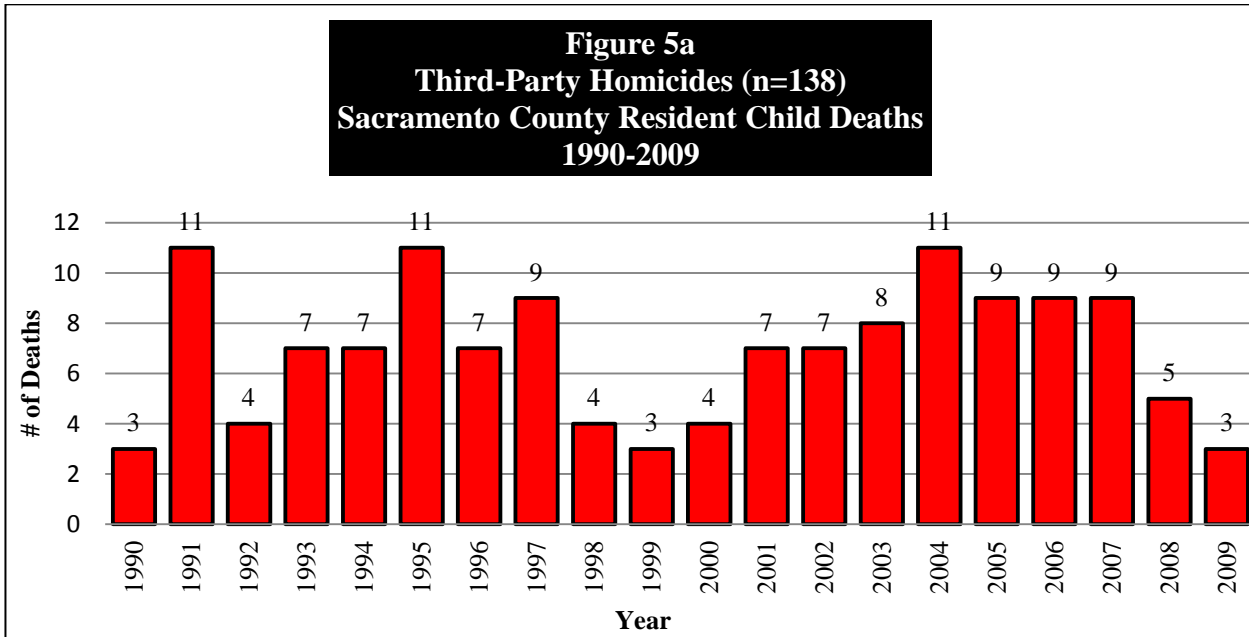


Figure 5b shows third-party homicides by decade. Fifty-two percent (72 of 138) of third-party homicides took place between 2000 and 2009 with the remaining 48% (66) between 1990 and 1999.

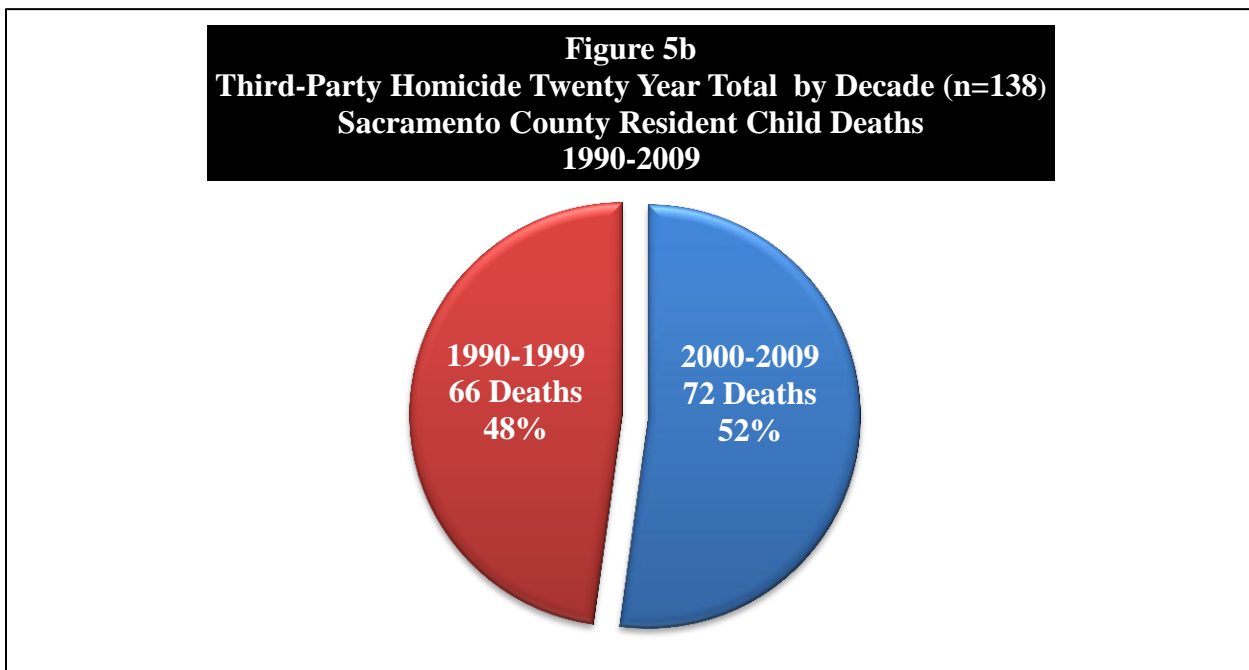
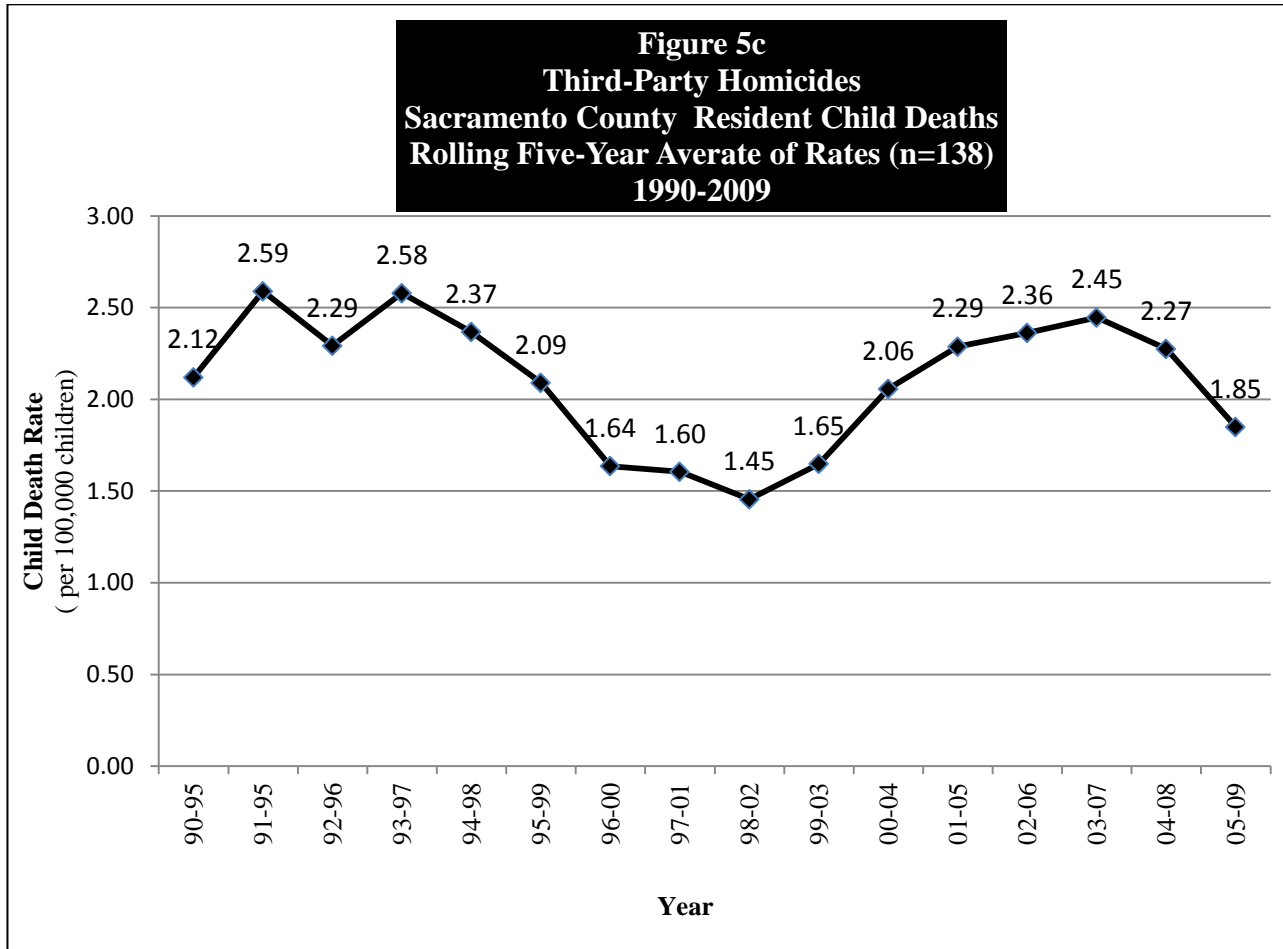
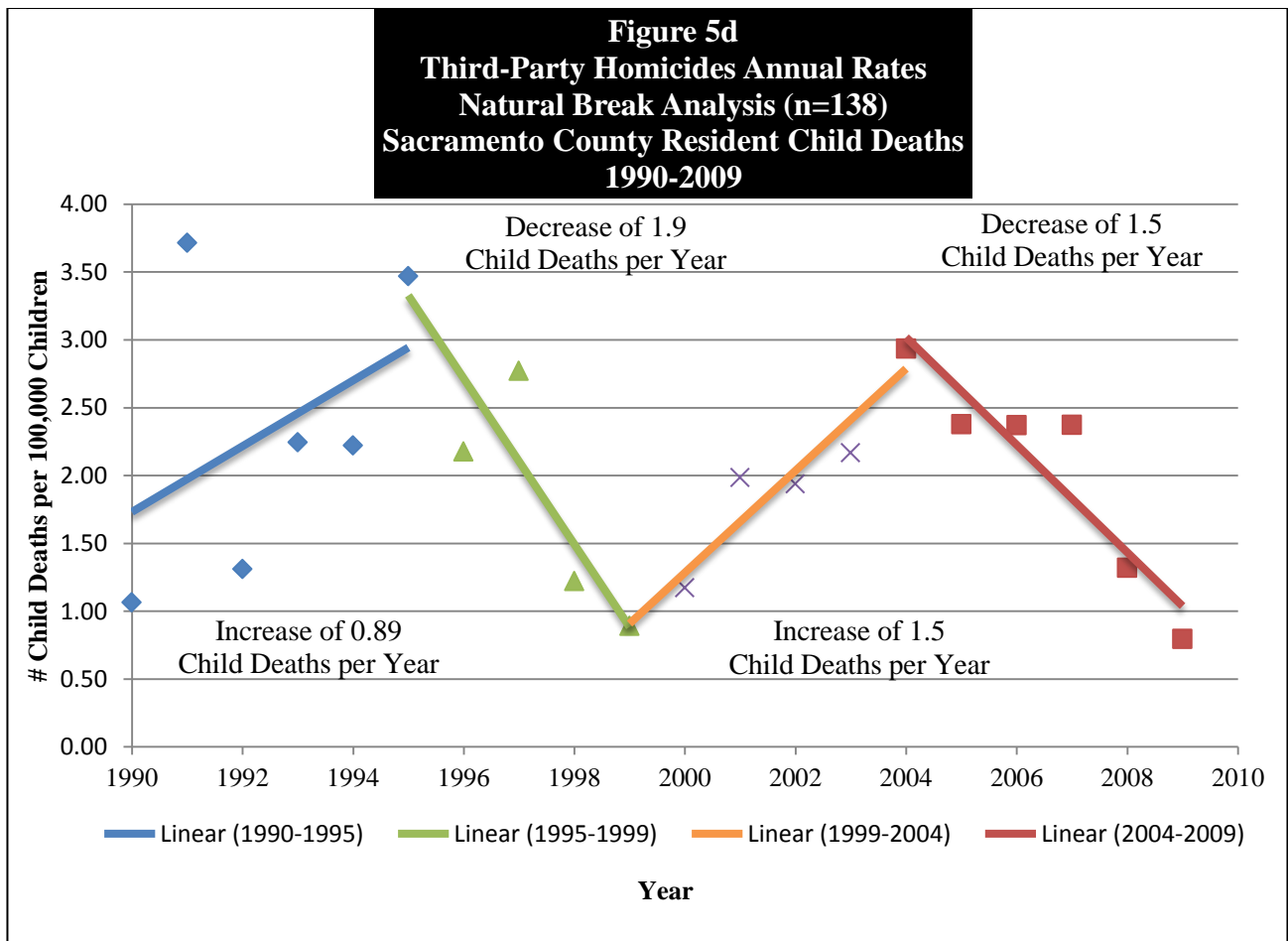


Figure 5c illustrates the number of third-party homicides as five-year rolling averages of rates from 1990 through 2009. Using rolling five-year averages of rates makes it easier to depict third-party homicide trends overtime. There was a statistically significant decrease in third-party homicides between the rolling five-year periods from 1993 through 1997 and 1998 through 2002. Between the

1999 through 2003 and 2003 through 2007 rolling five-year periods there was an increase in third-party homicides.



Using natural break points in the data, Figure 5d shows linear trends in third-party homicides during distinct time periods between 1990 and 2009. Natural breaks in data trends are those critical points where the slope or curve of the distribution changes direction, either up or down. There are three noted natural breaks in the data for third-party homicides, in 1995, 1999 and 2003. At these points the overall slope of the data distribution changed downward, upward and downward respectively. In the period between 1990 and 1995 there is an increase in the frequency of third-party homicides of approximately 0.89 deaths per year. Between 1995 and 1999 there is a significant decrease in third-party deaths of nearly 2 deaths per year. The decrease was followed by an increase, averaging approximately 1.5 deaths per year, between 1999 and 2004. Between 2004 and 2009 the trend has shown a decline in third-party homicides at an average rate of approximately 1.5 deaths per year.



Risk Factors

As previously stated, in order to detect trends and form prevention strategies at a local level, the CDRT investigates the family environments of all children who die in Sacramento County. Evidence of risk factors or family stressors such as substance abuse, prior child abuse, domestic or other violence, and mental illness are collected by CDRT members in preparation for each review.

The following information was known for the 138 third-party homicides from 1990 through 2009. At least one risk factor was present in 74% (102 of 138) of the third-party homicides and are as follows⁹:

- ❖ 49 decedents (36%) had a family history of abuse and neglect on the decedent or a sibling
- ❖ 39 decedents (28%) had a family history of gang involvement
- ❖ 37 decedents (27%) had a family history of alcohol and drug use
 - 25 decedents (18%) had drug or alcohol involvement at the time of death
- ❖ 30 decedents (22%) had a family history of violent crime including domestic violence
- ❖ 11 decedents (8%) had a family history of mental illness.

⁹ The total number of risk factors exceeds the number of third-party homicide deaths with risk factors, because in some child deaths more than one risk factor is present.

Geographic Distribution

Of the 138 third-party homicides from 1990 through 2009, 105 (76%) are from eight primary neighborhoods and 20 zip codes. Table E reflects the number of third-party homicides from the first decade (1990-1999) and the second decade (2000-2009) by the top six neighborhoods and zip codes. There was an increase in four of the six neighborhoods from the first decade to the second decade. There was a decrease in two of the six neighborhoods from the first decade to the second decade. Although there are many similarities in the distribution of third-party homicides across the two decades, there are notable shifts and the emergence of new areas of third-party homicide density throughout the county. A table reflecting all third-party homicides by individual zip code can be found in Table Q in the back of this report.

Table E
Top 6 Neighborhoods Combined for Third-Party Homicides (n=93)
1990-1999 and 2000-2009

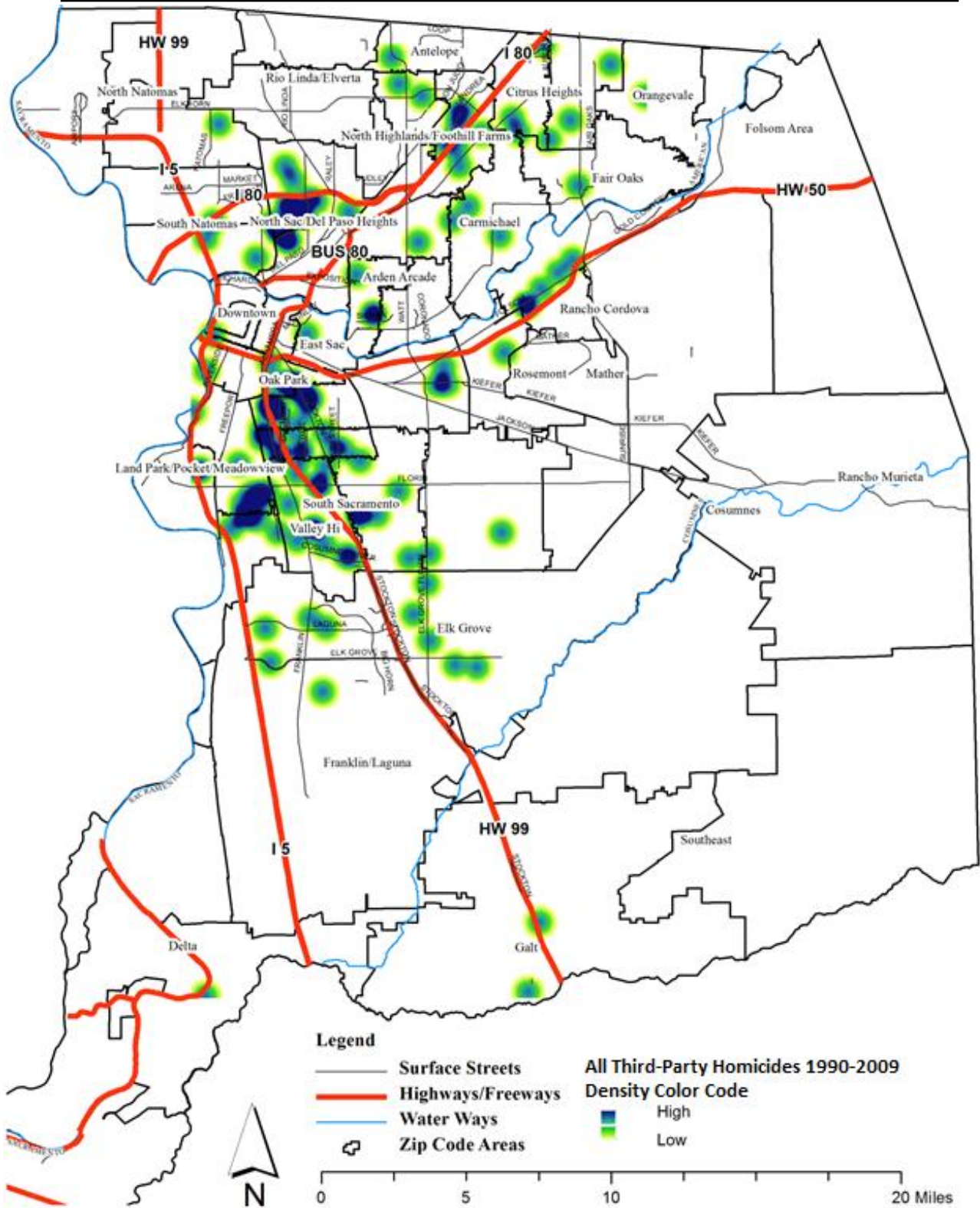
Neighborhood	Zip Code(s)	# Third-Party 1990-1999	# Third-Party 2000-2009	Total # Third- Party 1990-2009
South Sacramento (Valley Hi/ Meadowview/ Florin)	95822	2	7	9
	95823	10	4	14
	95828	2	4	6
	TOTAL	14	15	29
Fruitridge/ Stockton Blvd	95820	5	8	13
	95824	6	6	12
	TOTAL	11	14	25
North Sacramento/ Del Paso Heights/ Hagginwood	95815	0	2	2
	95838	5	8	13
	TOTAL	5	10	15
Elk Grove/ Laguna/ Sheldon/ Bruceville	95624	2	3	5
	95757	0	1	1
	95758	1	3	4
	TOTAL	3	7	10
Citrus Heights/ Orangevale/ Fair Oaks	95662	0	1	1
	95628	2	0	2
	95621	1	1	2
	95610	3	0	3
	TOTAL	6	2	8
North Highlands	95660	0	2	2
	95842	4	0	4
	TOTAL	4	2	6
	GRAND TOTAL	43	50	93

Although zip code analysis can be useful, it does not take into account the size differential within zip codes. To better understand where third-party homicides occurred in Sacramento County, Map iv indicates the areas of highest (dark blue) and lowest (yellow/clear) incident occurrence using Kernel Density analysis. This density analysis highlights areas using color codes to identify where third-party homicides are more frequent within a radius of approximately two miles. Neighborhoods¹⁰ with the highest frequency include Del Paso Heights, Elk Grove, Florin, Freeport, Fruitridge, Meadowview, North Highlands, North Sacramento, Oak Park, Rancho Cordova, South Sacramento and Valley High.

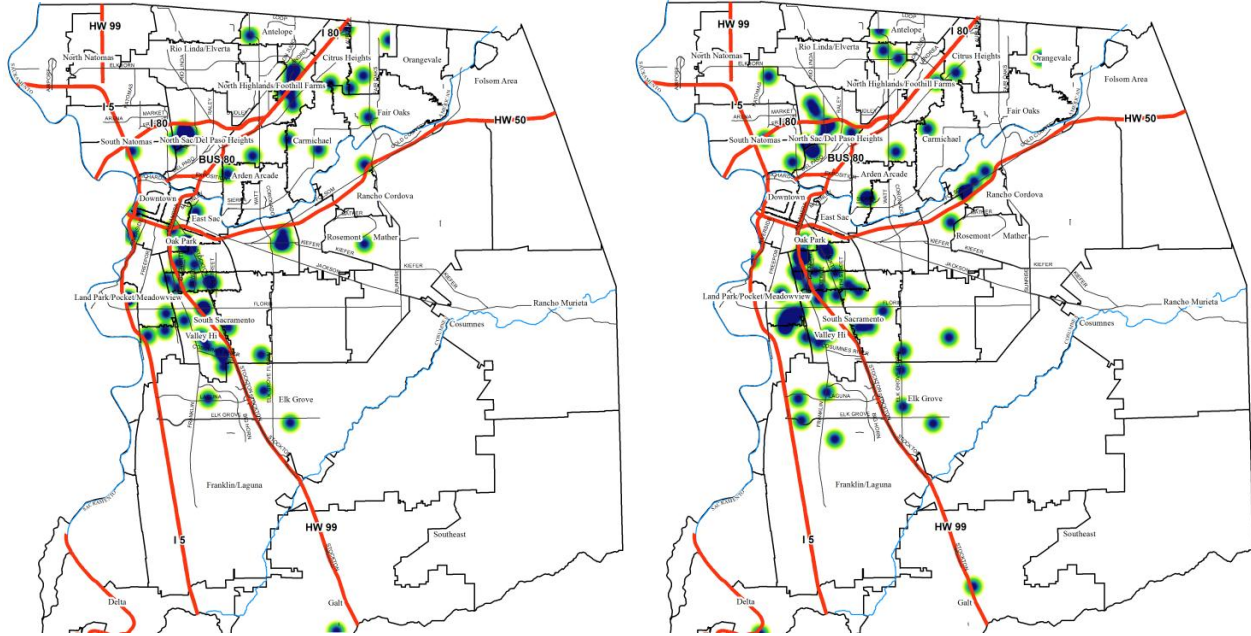
Map v shows a comparison of third-party homicide distribution from 1990 through 1999 and 2000 through 2009. Although there are many similarities in the distribution of third-party homicides across the two decades there are notable shifts and the emergence of new areas of density throughout the county. Laguna/Elk Grove, Rancho Cordova, Natomas, Rosemont and North Highlands are much more prominent from 2000 through 2009 relative to the previous decade. Citrus Heights/Orangevale/ Fair Oaks are less prominent.

¹⁰ Neighborhoods are listed in alphabetical order.

Map iv
Third-Party Homicides
Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Map v.
Third-Party Homicide by Decade
Kernel Density Distribution of Sacramento County Resident Child Deaths
Left Map 1990- 1999; Right Map 2000-2009



Victim Demographics

The age of third-party homicide victims is detailed in Tables F1 and F2. Children between 10 and 17 years of age represent 89% of all third-party homicides and 44% of the child population. Since youth represent such a large proportion of all third-party homicides, Figure 6 shows the frequency of third-party homicides separating victims between 10 and 17 years of age from victims between 0 and 9 years of age. Further information about youth deaths can be found in Chapter III Demographics.

Table F1			
Third-Party Homicide by Age Category (n=138)			
Sacramento County Resident Child Deaths 1990 – 2009			
Child Age Category	# Third-Party Homicide	% Third-Party Homicide	% Child Population (90-09) ¹¹
Infant	2	1.5%	6%
1-4	6	4.3%	22%
5-9	7	5%	28%
10-14	27	19.6%	28%
15-17	96	69.6%	16%
Total	138	100%	100%

¹¹ Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011

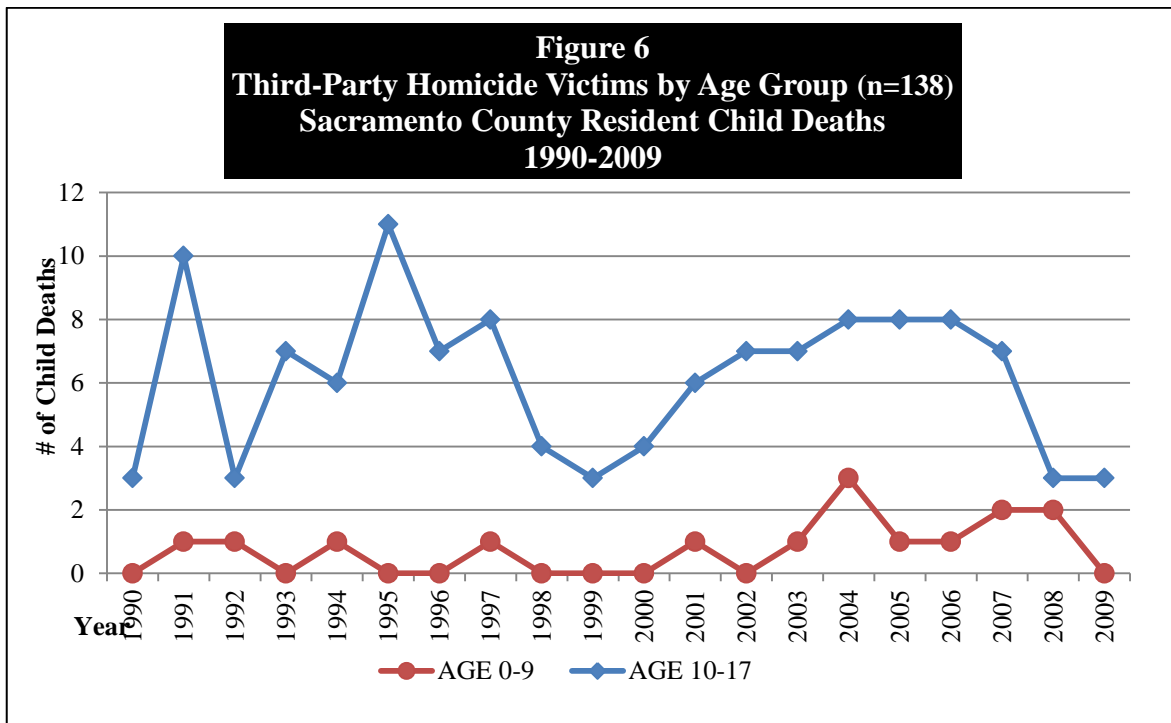
From 1990 through 2009, gender and racial disproportionality was apparent in third-party homicide victims. Male victims disproportionately represented 83% (114 of 138) of all third-party homicides during that time period as opposed to females which represented 17% (24 of 138). African American victims represent 32% of third-party homicide deaths, but are disproportionately represented relative to their representation in the general child population (12%). The issue of racial disproportionality is explored further in Chapter III Demographics.

Table F2 Third-Party Homicide by Race (n=138) Sacramento County Resident Child Deaths 1990-2009			
Race Classification	# Third-Party Homicide	% Third-Party Homicides	% Child Population (90-09) ¹²
African American	44	32%	12%
Asian/Pacific Islander	26	19%	13%
Caucasian	27	20%	48%*
Hispanic	25	18%	22%
Multi-Racial***	8	6%	4%
Other	8	5%	1%**
Total	138	100%	100

*Includes other and unknown races as reported by data source

** Native American

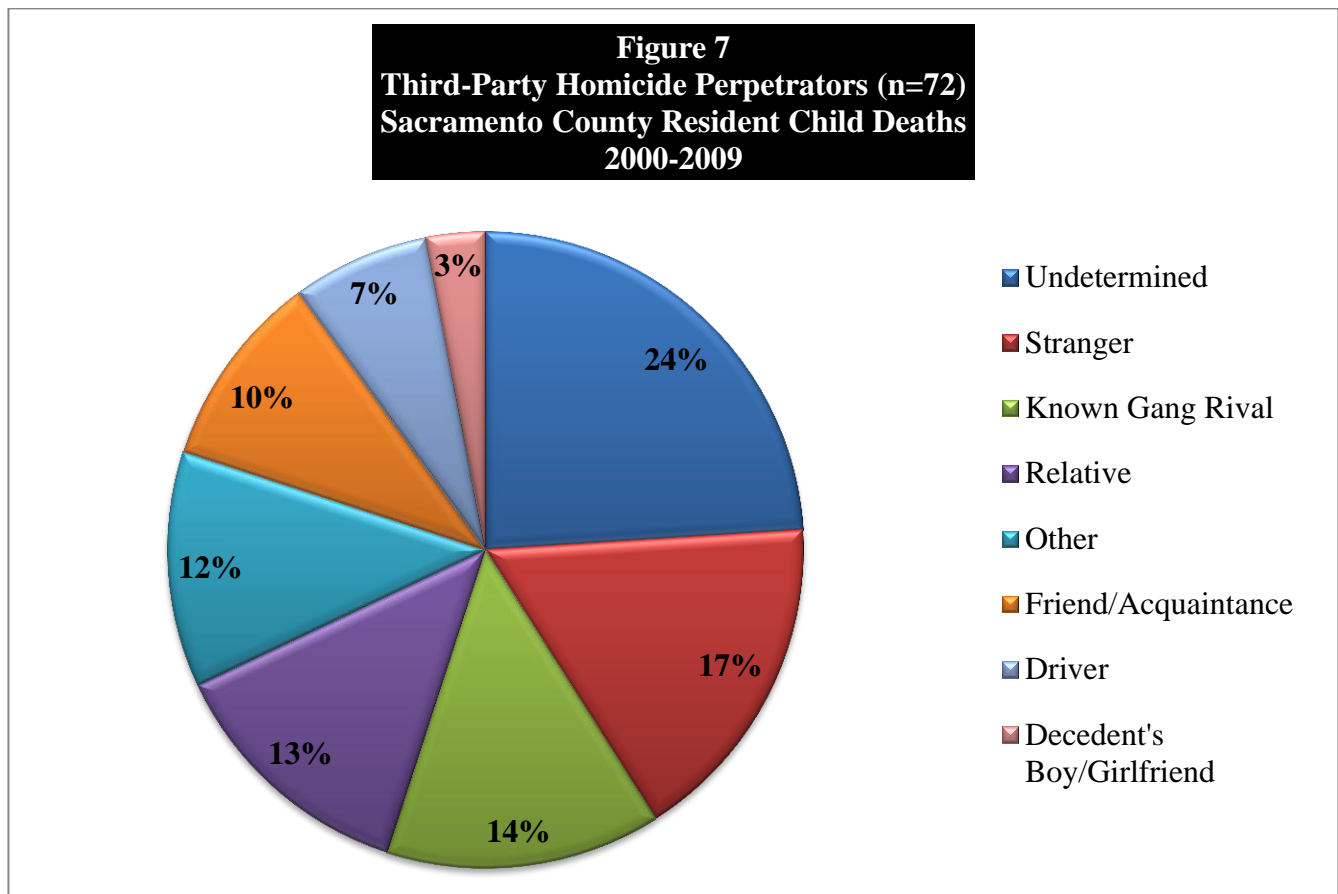
*** Multi-racial data collection was started in 2003 by the CDRT and Public Health



¹² Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011

Perpetrators

Data collection regarding perpetrators of third-party homicides has been collected by the Sacramento County CDRT since 1990, however in depth and consistent data collection did not begin until improvements were made in 2000. Figure 7 shows the breakdown of third-party perpetrators during the twenty year time period. Between 2000 and 2009 there were 72 third-party homicides. An undetermined perpetrator constitutes the largest category representing 24% (17 of 72) of third-party homicide perpetrators. An undetermined perpetrator is assigned to a homicide if insufficient perpetrator information was available or known. This is followed by strangers representing 17% (12 of 72) of perpetrators, known gang members representing 14% (10 of 72), and relatives of the child representing 13% (9 of 72).



Chapter II

All Causes of Child Death

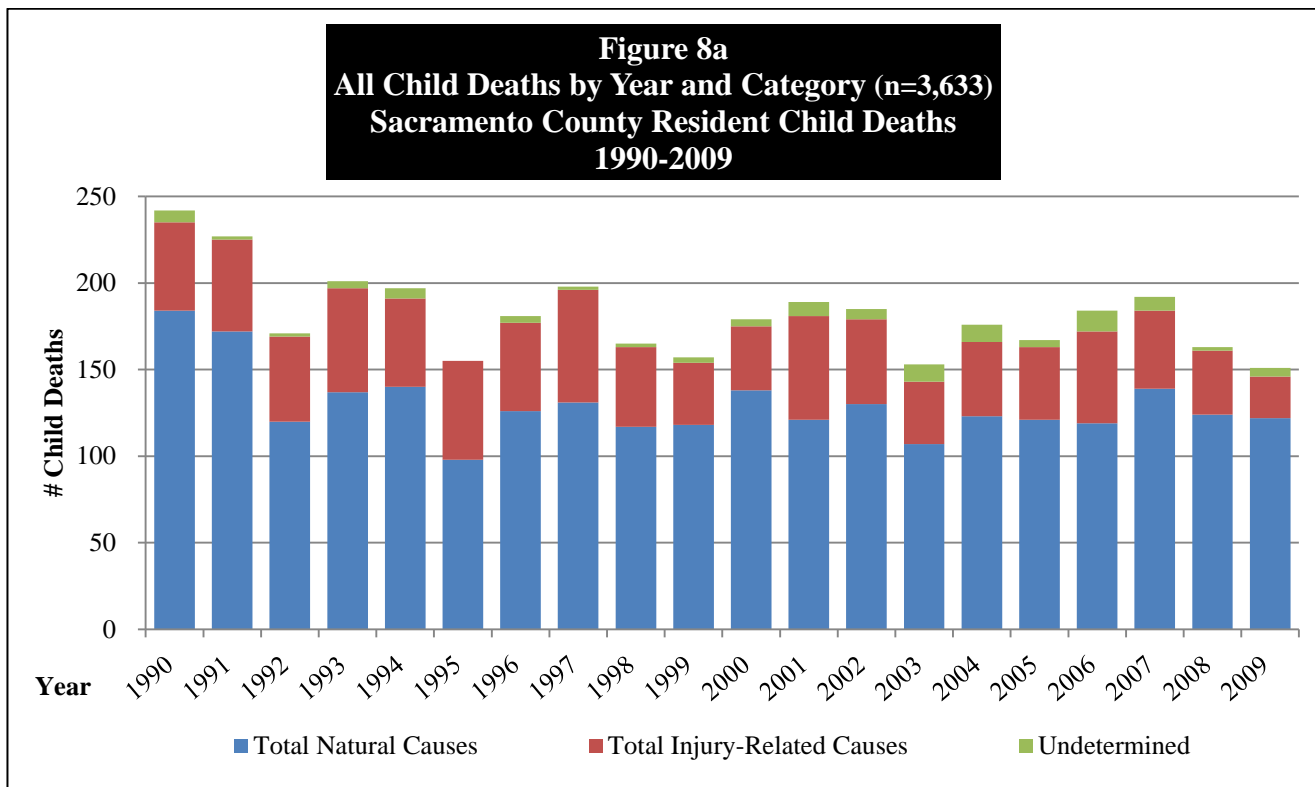
Chapter Two

All Causes of Child Death

In addition to identifying instances of child homicides, the Sacramento County Child Death Review Team (CDRT) reviews all child deaths in the county to develop an aggregate description of child deaths as an overall indicator of the well-being of children. This chapter includes information regarding the overall child death rate, cause and manner of deaths and risk factors associated with Sacramento County resident child deaths.

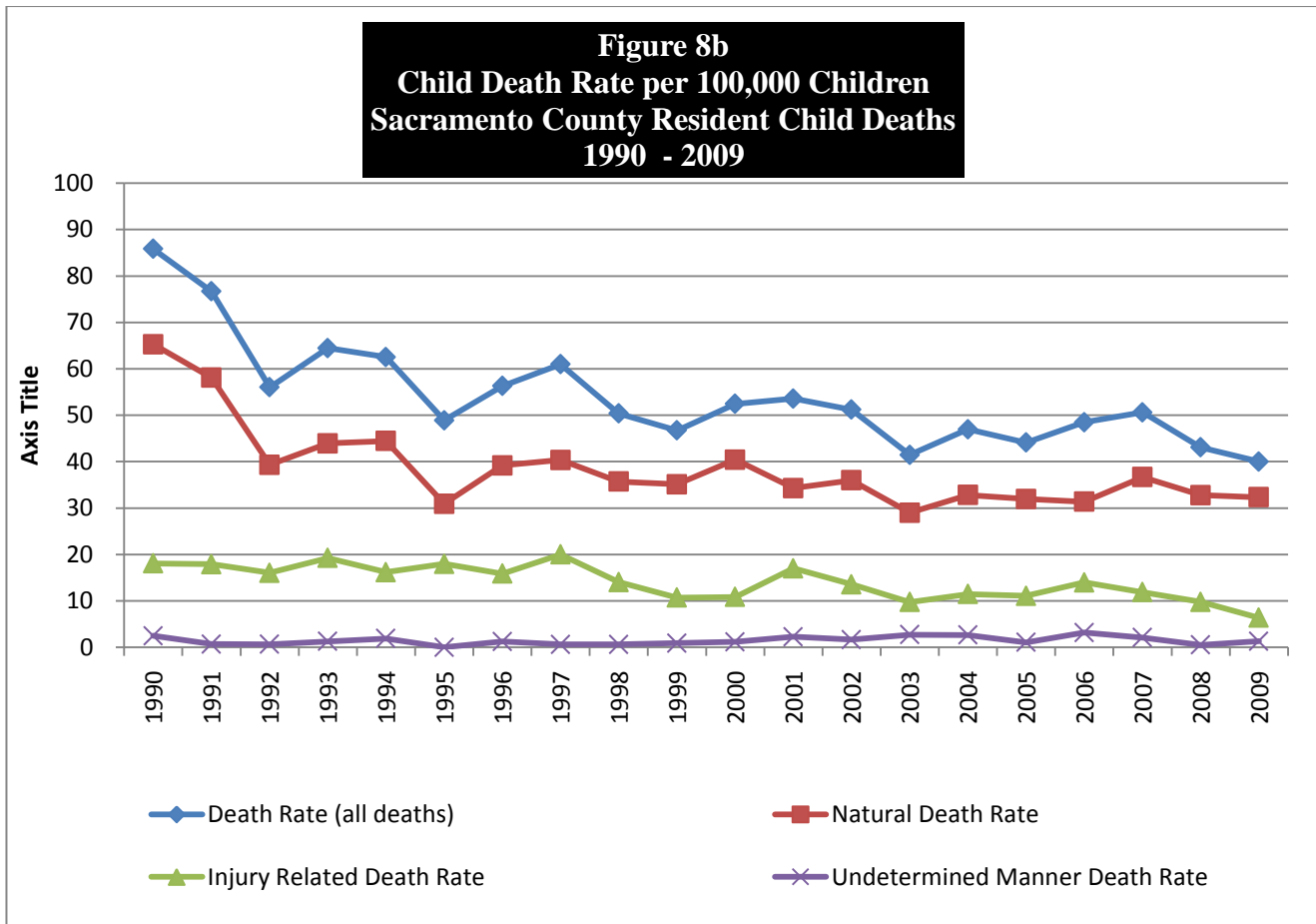
Child Death Rates

During the twenty year period from 1990 through 2009 there were a total of 3,633 Sacramento County resident child deaths. These deaths included 2,587 (71%) natural deaths, 945 (26%) injury-related deaths and 101 (3%) deaths of an undetermined manner. Figure 8a shows the number of deaths in each category per year in the two decade period.



The overall child death rate during the twenty year time period was 53.20 per 100,000 Sacramento County resident children. During the same time period, the child death rate for natural causes only was 37.89 per 100,000 Sacramento County resident children, 13.84 per 100,000 for injury-related causes and 1.45 per 100,000 for deaths caused by an undetermined manner.

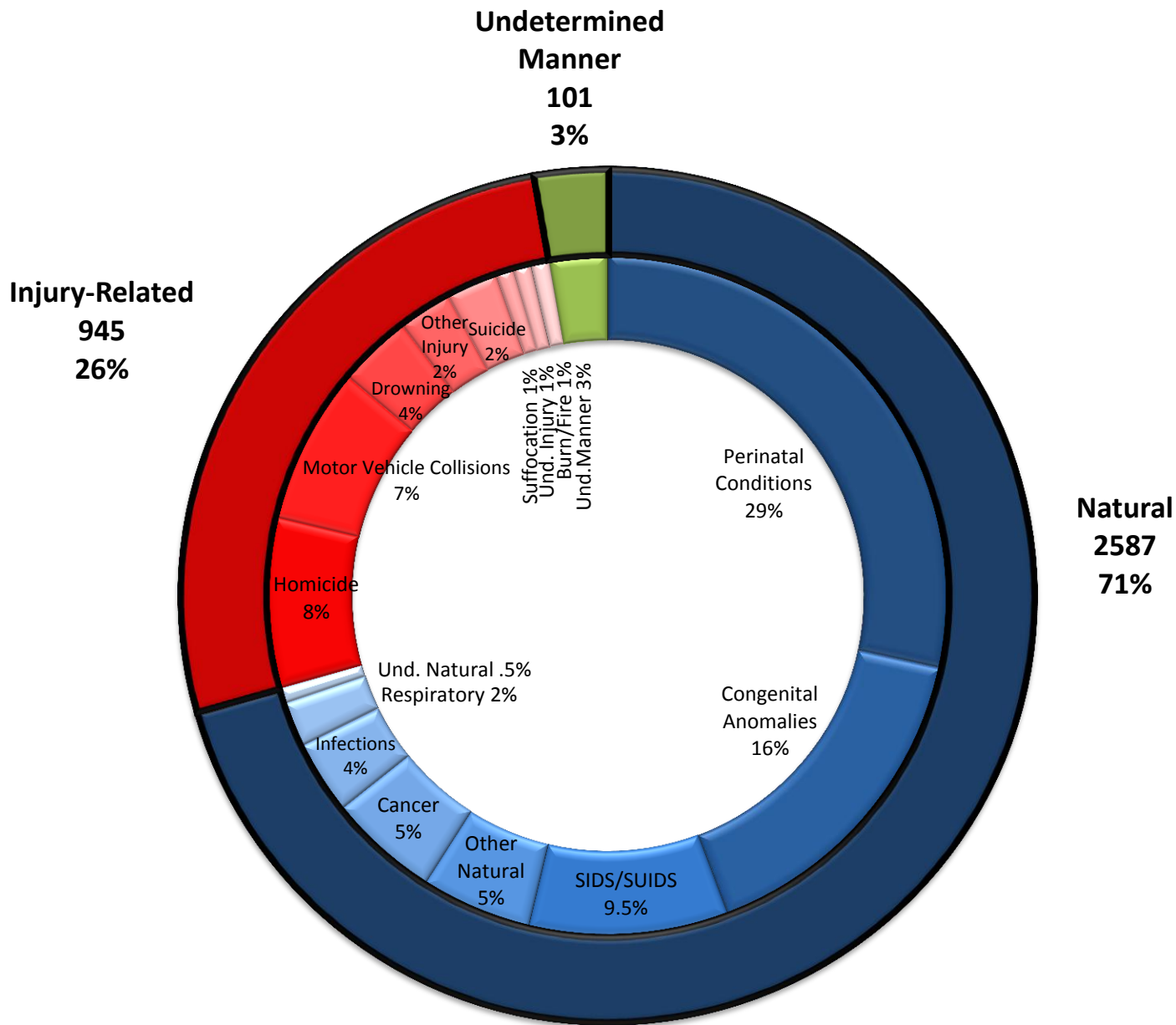
Figure 8b depicts the death rate of Sacramento County resident child deaths by year with a separate line representing all deaths, natural deaths, injury-related deaths and deaths of an undetermined manner.



Cause and Manner of Deaths

Figure 9 provides a visual description of how all manner of deaths for Sacramento County residents between 1990 and 2009 were categorized. The data is also represented in Table G. Most deaths fall into two main categories, natural causes and injury-related causes. These broad categories are further sub-categorized according to the specific manner of death. Certain child deaths do not fall into the two main categories because the exact manner of death could not be determined. These deaths are placed in a category called undetermined manner. An example of a death classified as undetermined manner is an infant sleep-related death where there is not enough evidence to determine the manner and/or cause of death and present risk factors preclude a Sudden Infant Death Syndrome (SIDS) or Sudden Unexpected Infant Death Syndrome (SUIDS) diagnosis.

Figure 9
All Child Deaths by Cause and Manner (n=3,633)
Sacramento County Resident Child Deaths
1990-2009



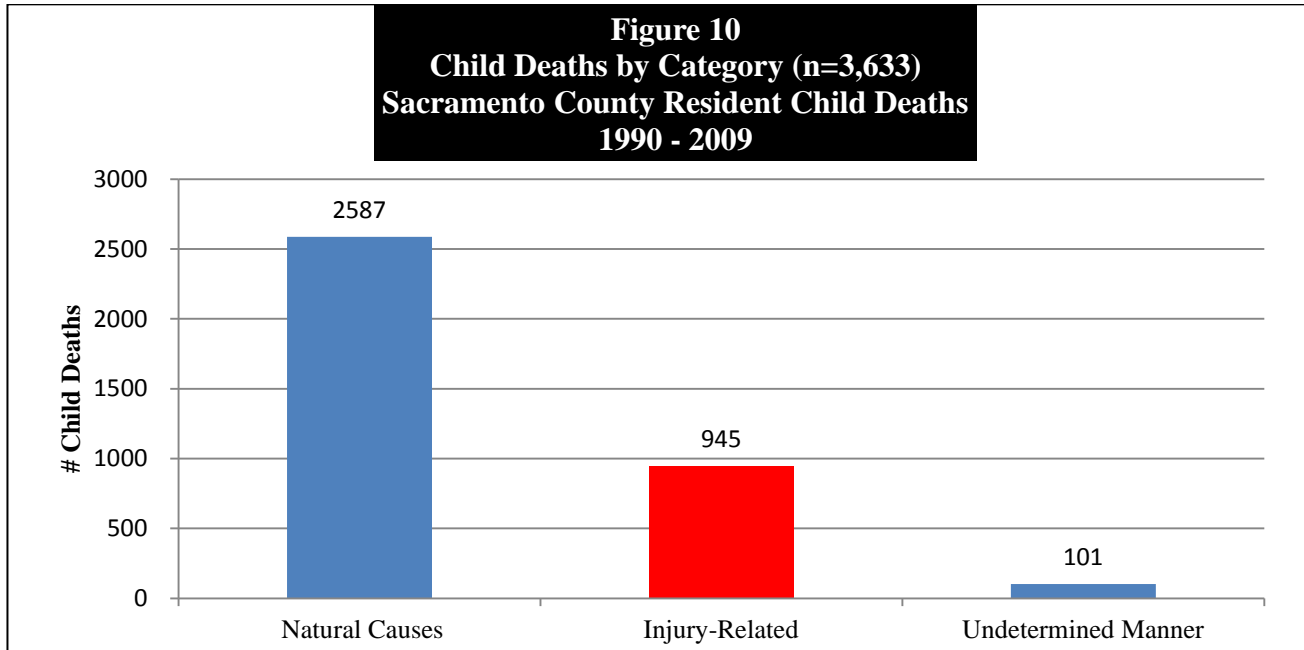
Of the 3,633 child deaths, the following categories accounted for 72% (2,610) of all child deaths:

- ❖ 1,041 (29%) were Perinatal Conditions
- ❖ 581 (16%) were Congenital Anomalies
- ❖ 420 (12%) were Infant Sleep-Related deaths, including Sudden Infant Death Syndrome (SIDS)/Sudden Unexpected Infant Death Syndrome (SUIDS), Undetermined and Other Infant Sleep-Related deaths
- ❖ 296 (8%) were Homicides
- ❖ 272 (7%) were Motor Vehicle Collisions (MVC)

Table G
All Child Deaths by Cause and Manner
Sacramento County Resident Child Deaths
1990-2009

Category		
Natural Causes	#	%
Perinatal Conditions	1041	29%
Congenital Anomalies	581	16%
SIDS	319	9%
Cancer	192	5%
Other	193	5%
Infections	128	4%
Respiratory	78	2%
SUIDS	28	.5%
Undetermined – Natural	27	.5%
Total Natural Causes	2587	71%
Injury-Related Causes		
Injury-Related Causes	#	%
Homicide	296	8%
<i>CAN Homicide</i>	(158)	(4%)
<i>Third-Party Homicide</i>	(138)	(4%)
Motor Vehicle Collision	272	7%
<i>Driver/Occupant</i>	(156)	(4%)
<i>Pedestrian</i>	(89)	(2%)
<i>Bike</i>	(27)	(1%)
Drowning	129	4%
Suicide	90	2%
Other - Injuries	57	2%
Burn/Fires	31	1%
Suffocation	32	1%
Undetermined – Injury	31	1%
Poisoning/ Overdose	7	0%
Total Injury-Related Causes	945	26%
Undetermined Manner	101	3%
TOTAL	3633	100%

Figure 10 shows a breakdown of Sacramento County resident child deaths by major category from 1990 through 2009.



Risk Factors

As previously stated, in order to detect trends and form prevention strategies at a local level, the CDRT investigates the family environments of all children who die in Sacramento County. Evidence of risk factors or family stressors such as substance abuse, prior child abuse, domestic or other violence, and mental illness are collected by CDRT members in preparation for each review.

Known risk factors were present in 1,607 of the 3,633 (44%) total child deaths from 1990 through 2009 and are as follows¹³:

- ❖ 821 decedents (23%) had family history of abuse and neglect on the decedent or a sibling
- ❖ 717 decedents (20%) had family history of alcohol and drug use
 - 219 decedents (6%) had drug or alcohol involvement at the time of death
- ❖ 449 decedents (12%) had family history of violent crime including domestic violence
- ❖ 142 decedents (4%) had a family history of mental illness
- ❖ 85 decedents (2%) had a family history of gang involvement

¹³ The total number of risk factors exceeds the number of child deaths with risk factors, because in some child deaths more than one risk factor is present.

Child Protective Services Involvement

The core responsibility of Child Protective Services (CPS) encompasses, and is structured around, two primary functions: screening and investigating child maltreatment reports to determine whether child abuse or neglect has occurred; and, when it has, assessing the risk of harm to the child and the needs of the family in order to determine what, if any, CPS intervention or other service provision is necessary. Therefore, in 2006, the Sacramento County CDRT began making improvements in capturing more extensive data during the death review process regarding the involvement of CPS in the lives of decedents and their families. This included data collection of foster care, sibling CPS and parental CPS histories.

In the four year period from 2006 through 2009, there were a total of 690 Sacramento County resident child deaths. Two hundred and forty six (246) of 690 child decedents (36%) had family involvement with Sacramento County CPS, another California County CPS and/or another State CPS. CPS involvement includes: decedent's CPS history, decedent's foster care history, decedent's sibling CPS history and/or parent of decedent's CPS history. A breakdown for each of the 246 decedents that had family involvement with CPS is as follows:

Decedent CPS History

52% of decedents with CPS family involvement (128 of 246) had involvement with a CPS agency prior to their death that could include Sacramento County, another California County and/or another State CPS. Of the 128, 22 (17%) had an open case or referral at the time of their death. Nine of the 128 (7%) had CPS involvement prior to their death.

Decedent Foster Care History

10% of decedents with CPS family involvement (24 of 246) were children known to be involved with the foster care system that could include Sacramento County, another California County and/or another State. Of the 24, 15 (63%) were in foster care at the time of their death. Two of the 15 (13%) children in foster care died as a result of a child abuse and neglect (CAN) homicide.

Sibling CPS History

48% of decedents with CPS family involvement (117 of 246) had siblings with CPS involvement that could include Sacramento County, another California County and/or another state CPS.

Parental CPS History

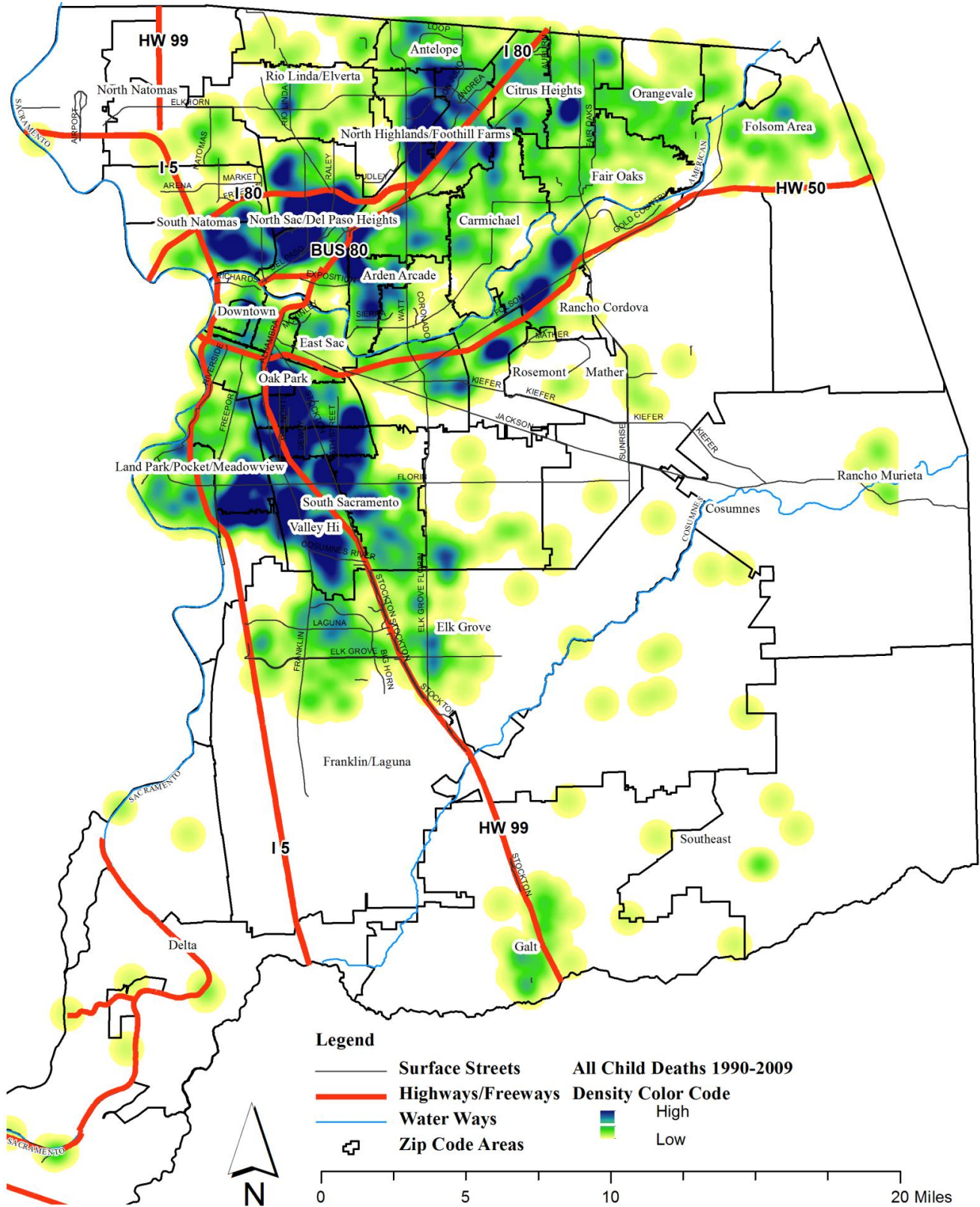
32% of decedents with CPS family involvement (78 of 246) had parents (mother or father) with CPS involvement as a child that could include Sacramento County, another California County and/or another State CPS.

Geographic Distribution

Map vi displays a map with the geographic distribution of all child deaths for Sacramento County child residents from 1990 through 2009. The incidence of child deaths is most frequent in areas

where the map shows a dark blue. Child deaths are found to occur throughout the county with concentrations in areas with higher populations.

Map vi
All Child Deaths
Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Preventable Deaths

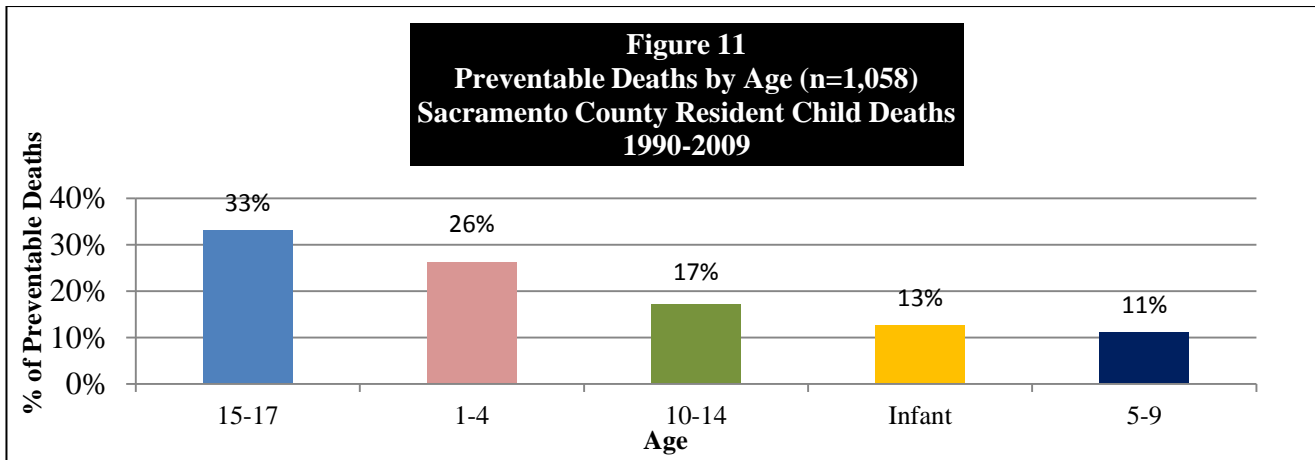
Two year old Rebecca was staying with her uncle, cousin and grandmother at her grandmother's house while her parents were out of town. During her stay, she was being watched by her uncle who was also supervising her four year old cousin. As Rebecca and her cousin were playing inside, her uncle decided to go out front to smoke a cigarette. When he returned he noticed the door to the backyard was open. The door was left unlocked and there was not a fence surrounding the pool in the backyard. Rebecca's uncle found Rebecca face down in the swimming pool.

One of the principle functions of the Sacramento County CDRT is to develop recommendations for the prevention of child deaths based on review and statistical information gleaned from each review. Therefore, a main focus of the CDRT is on deaths that can be prevented. Typically injury-related deaths encompass all preventable deaths, however if evidence indicates that a natural death could have been prevented it will be included in this category. Subsequently, if the CDRT deems that an injury-related death was not preventable, it would not be included in this category. Through the twenty year time period, the CDRT has developed annual recommendations that are included in each annual report. These recommendations focus on deaths that are preventable. It should be noted that deaths due to an undetermined manner (even if they are deaths due to infant sleep-related issues) are not included in the preventable death category because it cannot be determined whether the death was due to a natural or injury-related cause. Deaths of an undetermined manner that are infant sleep-related are discussed in Chapter III Demographics.

During the twenty year time period, 1,058 (29%) of the 3,633 child deaths were found to be preventable. The following four categories accounted for 77% (810) of the 1,058 preventable deaths:

- ❖ 296 (28%) preventable deaths were Homicides
 - 158 (15%) were CAN homicides
 - 138 (13%) were third-party homicides
- ❖ 272 (26%) preventable deaths were of Motor Vehicle Collisions (MVC)
 - 156 (15%) were driver/occupant collisions
 - 89 (8%) were pedestrian collisions
 - 27 (3%) were bike collisions
- ❖ 129 (12%) preventable deaths were a result of a drowning
- ❖ 113 (11%) preventable deaths were natural deaths for which there was a preventable intervention or treatment available

Figure 11 shows the distribution of preventable deaths by age. Children between 15 and 17 years of age represent the largest group of preventable deaths with 33%. Children between 0 and 4 years of age represent 39% of preventable deaths. This includes infants (13%) and children between 1 and 4 years of age (26%) combined. As detailed in Figure 11, other age groups include children between 10 and 14 years of age (17%) and children between 5 and 9 years of age (11%).



Risk Factors

As previously stated, in order to detect trends and form prevention strategies at a local level, the CDRT investigates the family environments of all children who die in Sacramento County. Evidence of risk factors or family stressors such as substance abuse, prior child abuse, domestic or other violence, and mental illness are collected by CDRT members in preparation for each review.

Known risk factors were present in 544 of the 1,058 (51%) preventable deaths from 1990 through 2009 and are as follows¹⁴:

- ❖ 254 decedents (24%) had family history of alcohol and drug use
 - 109 decedents (10%) had drug or alcohol involvement at the time of death
- ❖ 243 decedents (23%) had a history of abuse and neglect on the decedent or a sibling
- ❖ 130 decedents (12%) had a family history violent crime including domestic violence

Child Maltreatment Deaths

Definition: Any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child¹⁵

Child maltreatment was involved in the deaths of 405 of the 3,633 (11%) Sacramento County resident children who died in the twenty year time period from 1990 through 2009 (see Figure 12a). According to the Centers for Disease Control and Prevention (CDC), child abuse involves acts of commission that are deliberate and intentional; however harm to a child may or may not be the intended consequence. The following types of maltreatment involve acts of commission; physical abuse, sexual abuse and/or psychological abuse. According to the CDC, child neglect includes the failure to provide for a child's basic physical, emotional, or education needs or to protect a child

¹⁴ The total number of risk factors exceeds the number of preventable deaths with risk factors, because in some child deaths more than one risk factor is present.

¹⁵ Leeb RT, Paulozzi L, Melanson C, Simon T, Arias I. Child Maltreatment Surveillance: Uniform Definitions for Public Health and Recommended Data Elements, Version 1.0. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.

from harm or potential harm. The following types of maltreatment involve acts of omission; physical neglect, emotional neglect, medical/dental neglect, and/or failure to supervise (inadequate supervision and/or exposure to violent environments). An example of a case involving an element of neglect is a child who was severely malnourished and was not gaining weight while in the care of his or her parents. The overall trends in child maltreatment for the period between 1990 and 2009 mirror the pattern seen in Child Abuse and Neglect (CAN) homicides. For clarification on these classifications and terminology please review definitions for *abuse*, *abuse-related*, *neglect*, *neglect-related*, *questionable abuse/neglect*, *prenatal substance abuse* and *prenatal substance abuse-related* in Appendix F Glossary in the back of this report.

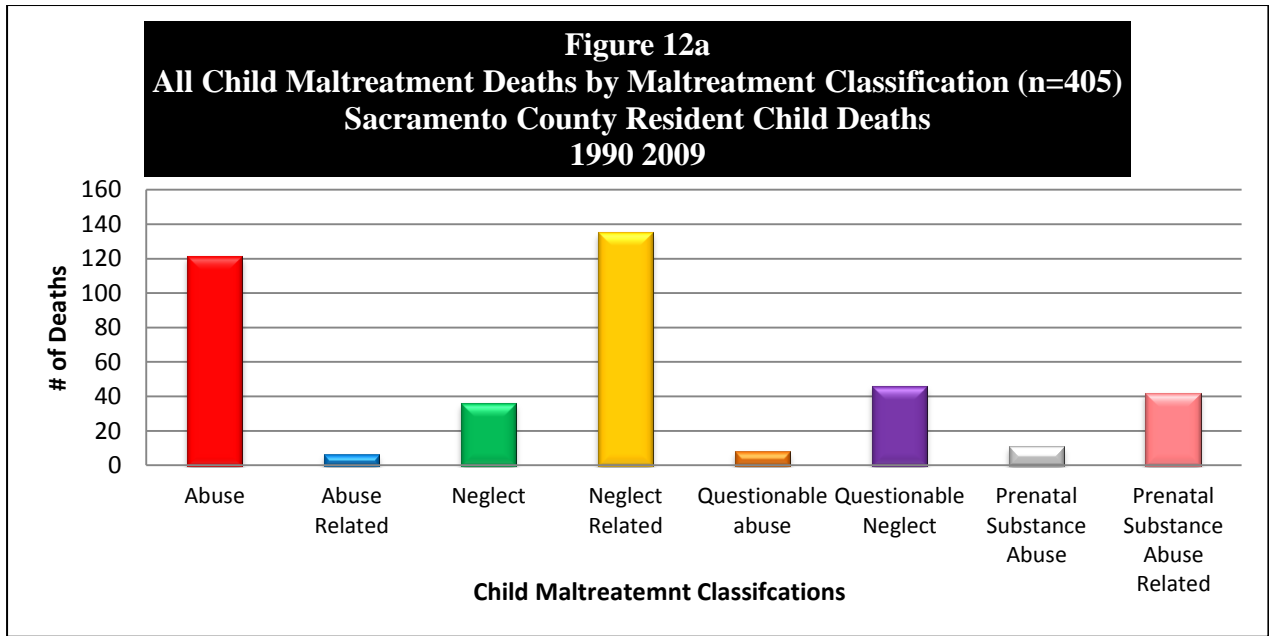
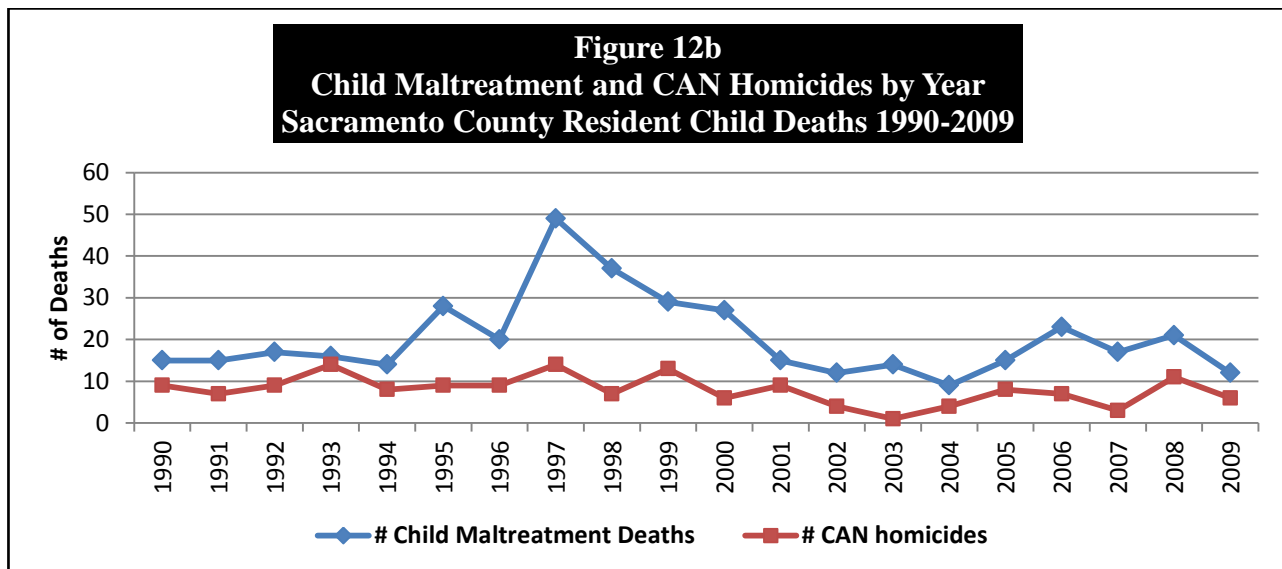


Figure 12b shows how the frequency of child maltreatment deaths and Child Abuse and Neglect (CAN) homicides have varied during the period between 1990 and 2009. The distribution of child maltreatment deaths nearly parallels the pattern seen in CAN homicides.

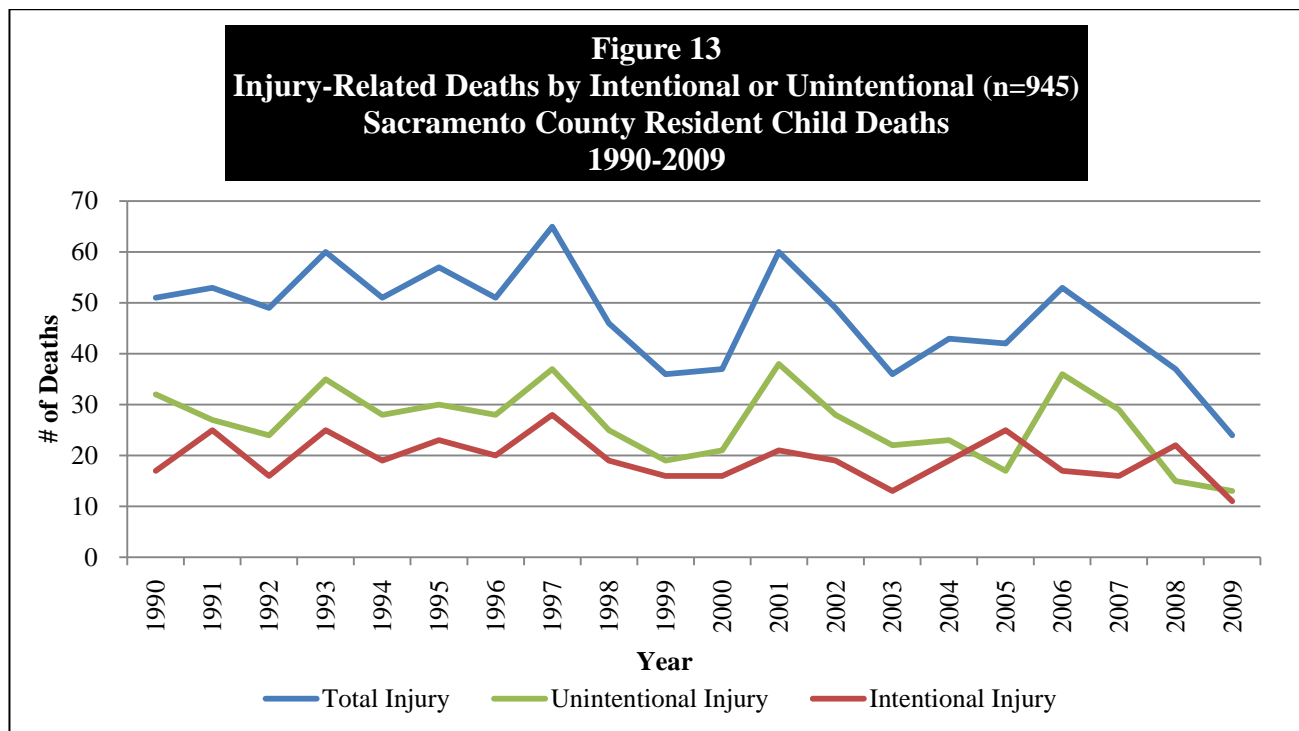


Injury-Related Deaths

Definition: Death as a direct result of an injury-related incident. Examples of injury-related deaths include homicide, motor vehicle collisions, suicide, drowning, burns/fires, and suffocation/choking.

Injury-related deaths can be analyzed in terms of three broad categories: intentional, unintentional and undetermined. Intentional injuries include homicides and suicides. Unintentional injuries are those where the forces causing the injuries are accidentally applied or set in motion. Motor vehicle collisions and drownings are examples of deaths commonly caused by unintentional injuries. Undetermined injury-related deaths are those that were a direct result of an injury-related incident but where the manner of death is unknown and the cause of death may or may not be medically identifiable.

During the twenty years, there were 945 (26%) injury-related deaths of 3,633 child deaths. Through this period, injury-related deaths decreased by approximately one death per year. The maximum frequency was reached in 1997 with 65 injury-related deaths and the minimum was reached in 2009 with 24 injury-related deaths. Figure 13 shows the total number of injury-related deaths, intentional and unintentional deaths only during the period between 1990 and 2009. It is interesting to note that in all years the frequency of unintentional injury is higher than intentional except in 2005 and 2008.



The following four categories account for 83% (787) of the 945 injury-related deaths:

- ❖ 296 (31%) were Homicides
- ❖ 272 (29%) were Motor Vehicle Collisions (MVC)
- ❖ 129 (14%) were a result of a Drowning
- ❖ 90 (9%) were Suicides

Intentional Injury-Related Deaths

Homicide

Homicides consist of Child Abuse and Neglect (CAN) homicides and third-party homicides. These deaths represent 31% (296) of all injury-related deaths. An extensive review of these deaths can be found in Chapter I Child Homicides.

Suicide

In the twenty year time period between 1990 and 2009 there were 90 suicide deaths, representing 9% of injury-related deaths. All suicide deaths were youth between 10 and 17 years of age. Thirty percent (27 of 90) were youth between 10 and 14 years of age and 70% (63 of 90) were between 15 and 17 years of age. Among the 90 suicide deaths, 26% of decedents (23 of 90) had at least one known risk factor in their family. This included 15% (14 of 90) of decedents that had families with a history of child abuse or neglect.

Since 2004 the Sacramento County CDRT has collected supplemental data regarding the circumstances surrounding suicide deaths. Of the 25 suicides from 2004 through 2009¹⁶:

- ❖ 10 decedents (40%) had a history of mental health issues
- ❖ 8 decedents (32%) had talked about suicide
- ❖ 7 decedents (28%) had made threats of suicide
- ❖ 5 decedents (20%) had previous attempts at suicide.

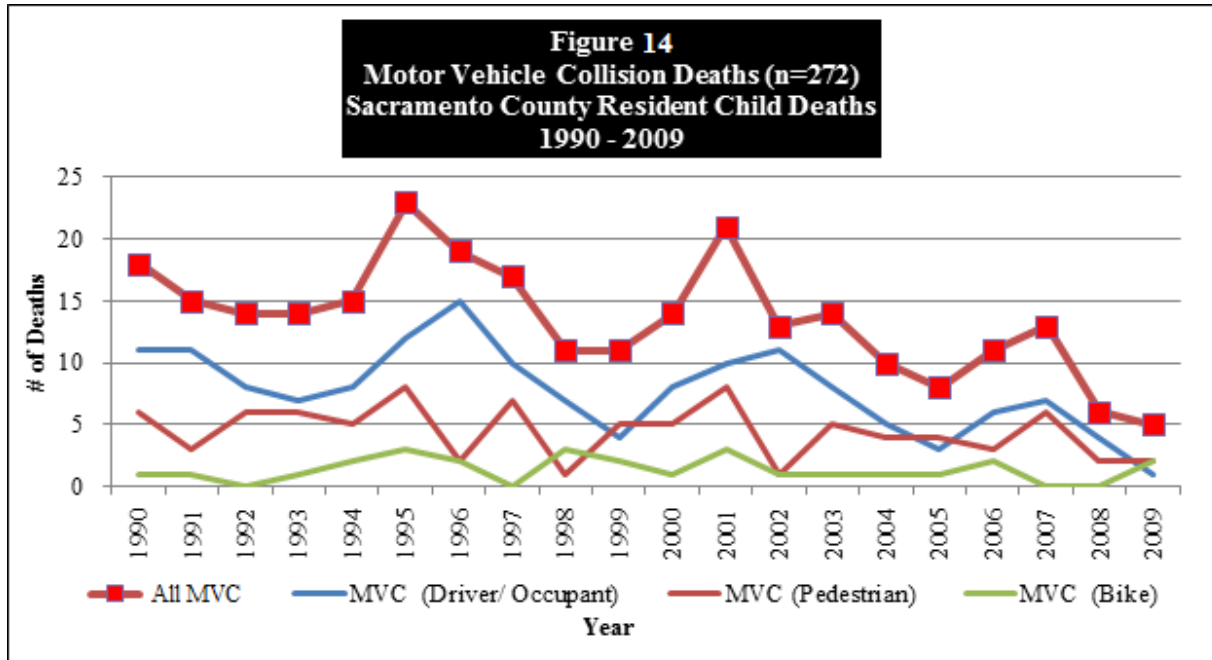
Unintentional Injury-Related Deaths

Motor Vehicle Collisions

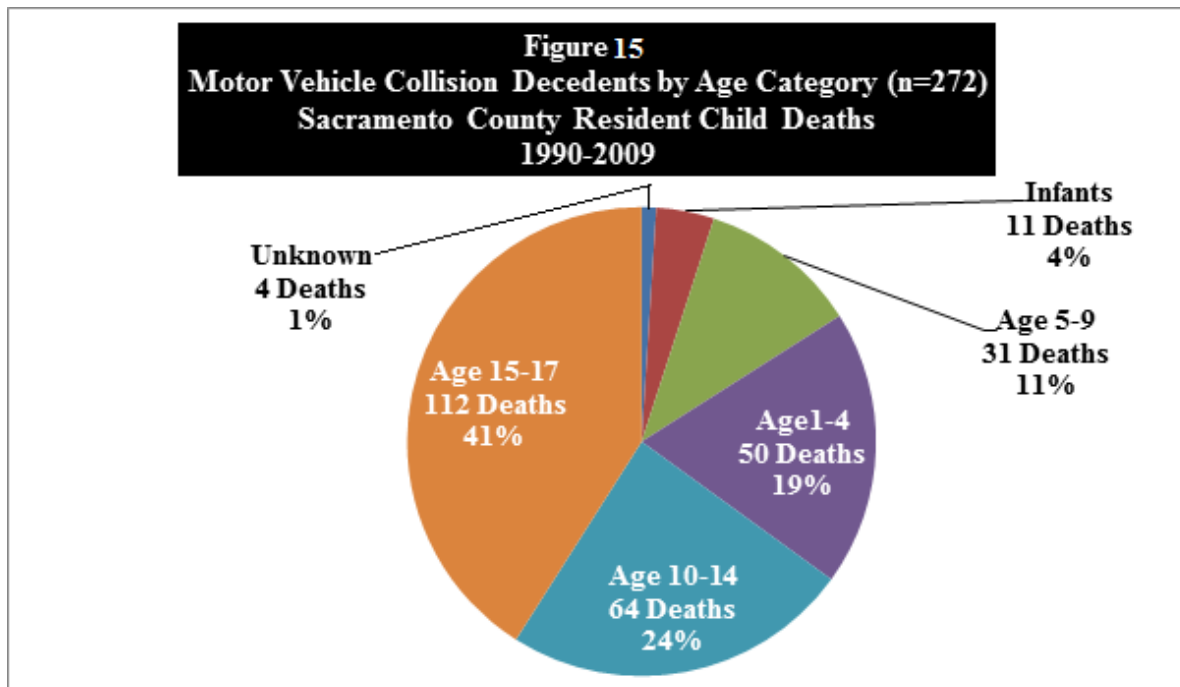
Motor Vehicle Collisions (MVC) include driver/occupant deaths, pedestrian deaths and bicycle deaths. The frequency of MVC deaths over the twenty year period from 1990 to 2009 are shown in Figure 14. There were a total of 272 MVC deaths between 1990 and 2009, representing 29% of the

¹⁶ The total number of risk factors exceeds the number of suicide deaths with risk factors, because in some child deaths more than one risk factor is present.

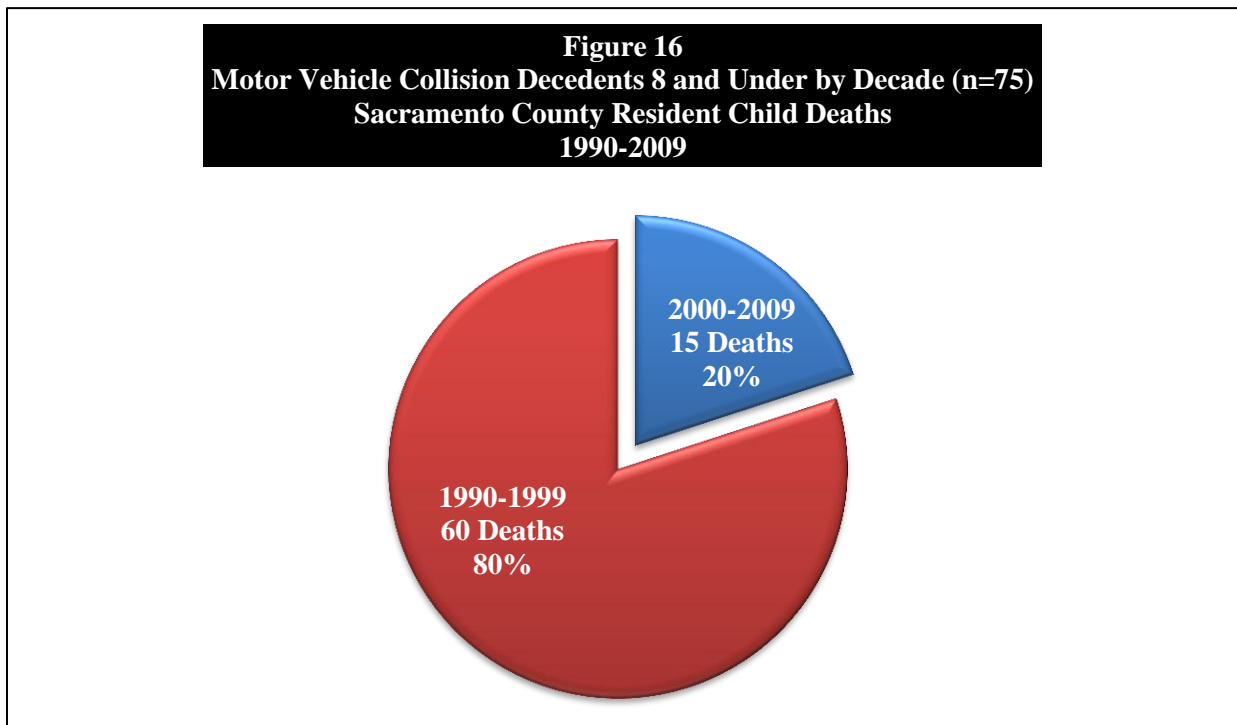
945 injury-related child deaths. Between 1990 and 1999 the average number of MVC deaths was 16 deaths per year and between 2000 and 2009 the average was 12 deaths per year.



As shown in Figure 15, children between 15 and 17 years of age represent the largest age group affected by MVC's comprising 41% of all decedents (112). Children between 10 and 14 years of age represent 24% of all MVC decedents (64), making youth between 10 and 17 years of age the most at risk age group comprising 65% of decedents (176). From 1990 through 1995 there were four MVC deaths in children with an unknown age. Males are disproportionately represented in this category constituting 60% (164) of all MVC decedents.



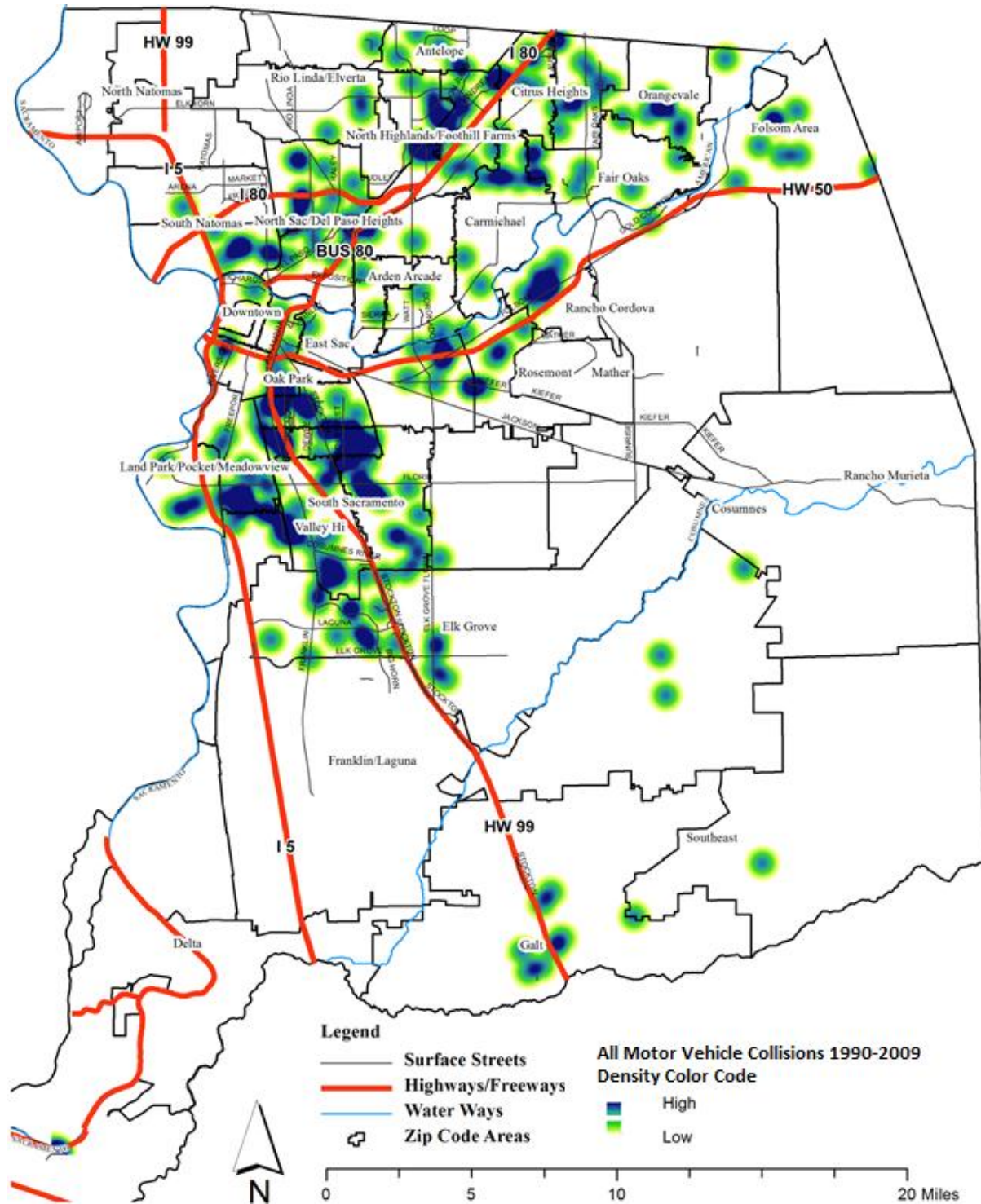
From 1990 through 2009, 28% of MVC decedents (75 of 272) were 8 years of age and under. Of the 75 decedents age 8 and under, 60 (80%) were in the time period between 1990 and 1999 and 20% (15) were between 2000 and 2009. This is shown in Figure 16. Of the 75 MVC decedents, 52% (39) were male and 48% (36) were female. Child safety laws since the 1980s have required all child passengers to be restrained in some form. Education and low-cost/loaner car seats are provided to county health departments for children 6 years of age or 60 pounds to remain in a booster seat. Effective January 2012, California law requires children 8 years of age or 80 pounds to remain in a booster seat, replacing the previous law of children 6 years of age or 60 pounds to remain in a booster seat.



Geographic distribution of MVC deaths can be seen on Map vii. The incidence of MVC deaths is most frequent in areas where the map depicts a dark blue hue. This signifies how MVC deaths are spread throughout the county with concentrations in areas with higher populations including Antelope, Carmichael, Citrus Heights, Del Paso Heights, Elk Grove, Folsom, North Highlands, North Sacramento, Oak Park, Orangevale, Rancho Cordova, Rosemont and South Sacramento¹⁷.

¹⁷ Neighborhoods are listed in alphabetical order.

Map vii
Motor Vehicle Collisions; Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Drowning

In the twenty years between 1990 and 2009 there were 129 drowning deaths, representing 14% of the 945 injury-related deaths. Among these 129 drowning deaths:

- ❖ 88 (68%) decedents were male
- ❖ 59 (46%) decedents had inadequate supervision.

As shown in Figure 17, 56% of drowning deaths (72 of 129) occurred in a residential pool. The second most common location for drowning deaths was the river at 20% (26 of 129) followed by other open water at 9% (12 of 129). Other locations include bathtubs (6%) and spa/hot tub (5%).

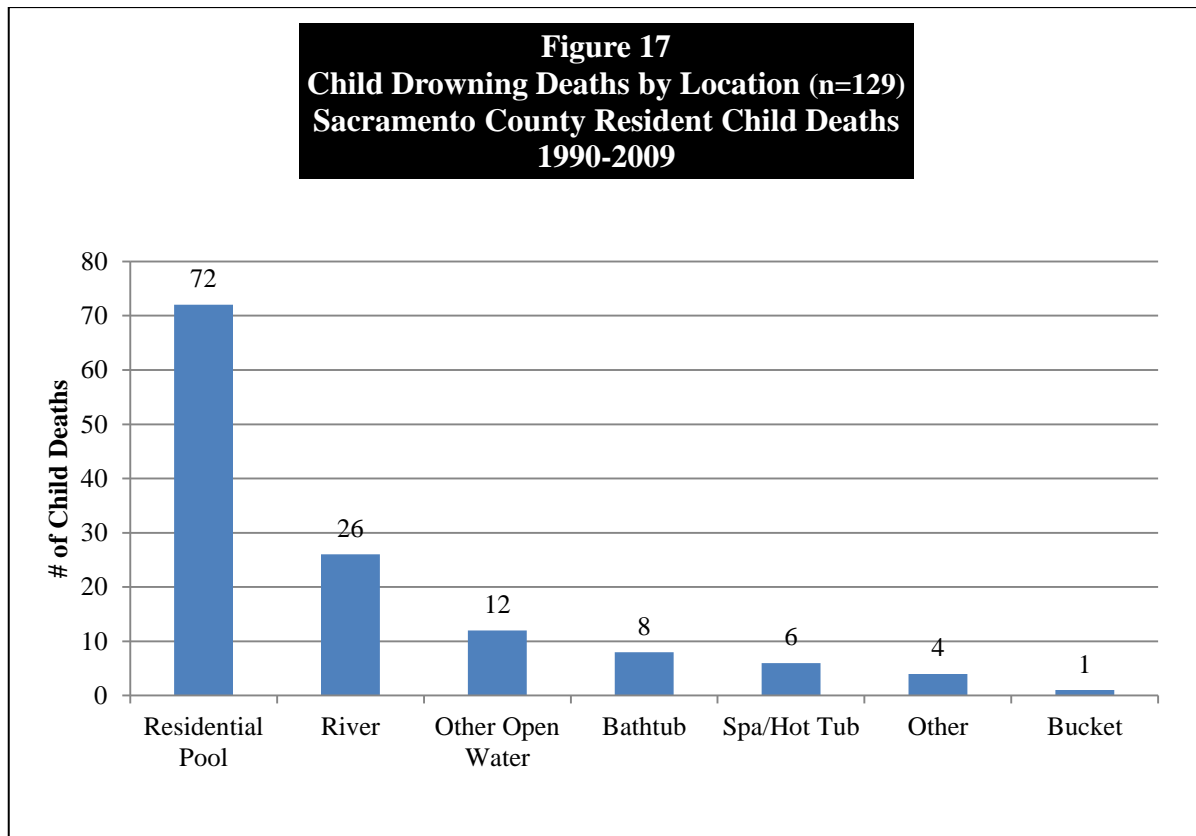


Table H details drowning deaths between 1990 and 2009 by age. Children between 1 and 4 years of age represent the majority of drowning deaths at 59% (76 of 129). Males are disproportionately represented in this category constituting 68% (88) of all drowning decedents

Table H Drowning by Age Category (n=129) Sacramento County Resident Child Deaths 1990 – 2009			
Child Age Category	# Drowning Deaths	% Drowning Deaths	% Child Population (90-09) ¹⁸
Infant	6	5%	6%
1-4	76	59%	22%
5-9	14	11%	28%
10-14	13	10%	28%
15-17	19	15%	16%
Unknown	1	--	--
Total	129	100%	100%

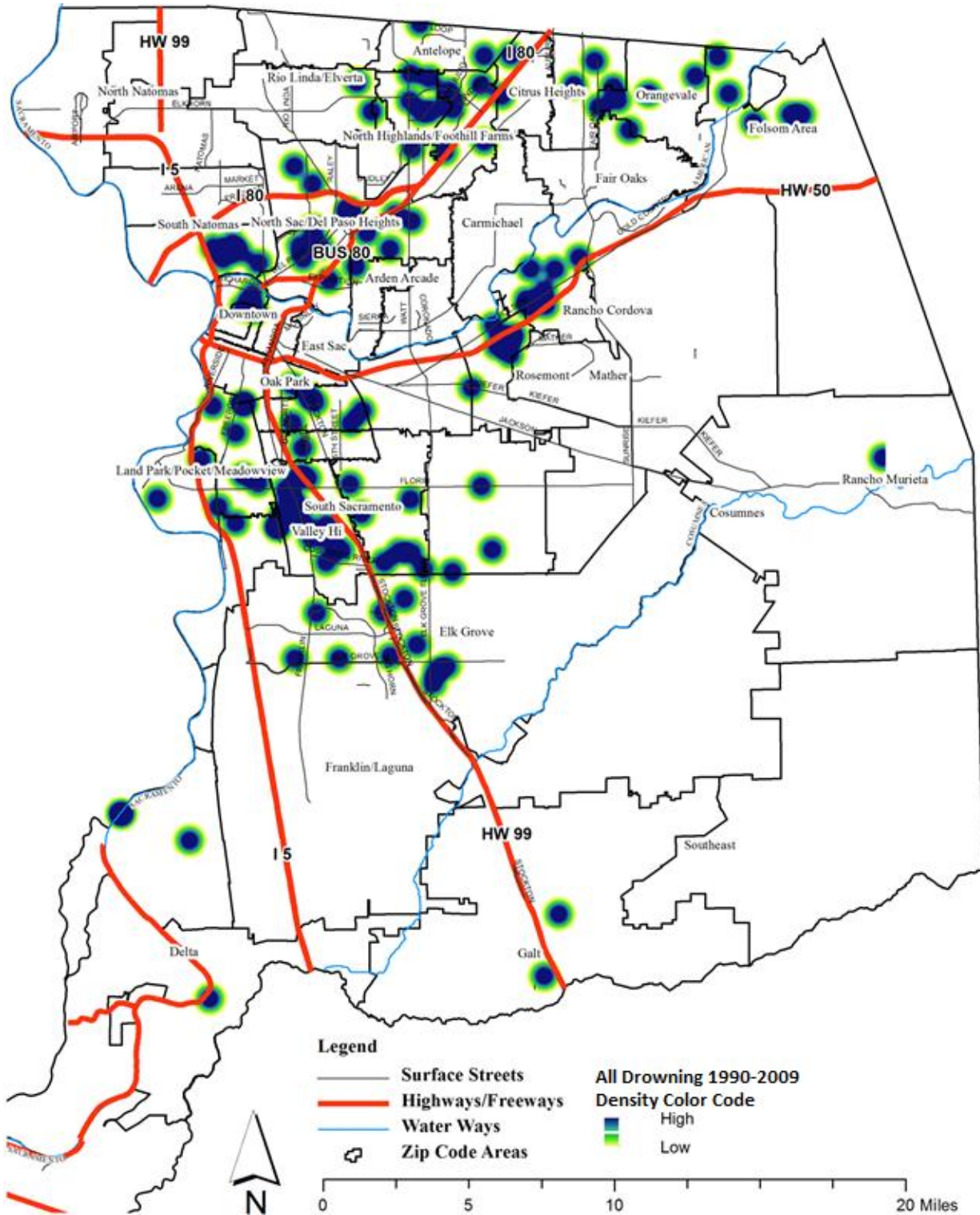
Since 2004 the Sacramento County CDRT has tracked data on barriers around swimming pools. From 2004 through 2009 there were 41 drowning deaths of which 26 (63%) were in residential pools and spas. Of the 26 deaths, 17 (65%) were known not to have a barrier. Four were known to have a barrier and only two barriers were used properly. In five of the 26 deaths, it was unknown if there was a barrier present.

Geographic distribution of drowning deaths can be seen in Map viii. The incidence of drowning deaths is most frequent in areas where the map depicts a dark blue hue. Significant concentrations of child drowning can be seen in Arden Arcade, Del Paso Heights, North Highlands/Antelope, North Sacramento, Rancho Cordova and South Sacramento and certain areas of Citrus Heights, Elk Grove and Folsom¹⁹.

¹⁸ Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011

¹⁹ Neighborhoods are listed in alphabetical order.

Map viii
Child Drowning Deaths; Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Natural Causes

Definition: Death due to complication(s) of disease process, or due immediately to natural cause(s). Examples of deaths categorized from natural causes include perinatal conditions, congenital anomalies, cancers, Sudden Infant Death Syndrome (SIDS), Sudden Unexpected Death Syndrome (SUIDS) and deaths due to infections or respiratory conditions.

In the period between 1990 and 2009 there were 2,587 deaths due to natural causes, representing 71% of the 3,633 child deaths.

Of the 2,587 natural child deaths, the following three categories accounted for 76% (1969) of all natural deaths:

- ❖ 1,041 (40%) were Perinatal Conditions
- ❖ 581 (22.5%) were Congenital Anomalies
- ❖ 347 (13.5%) were SIDS/SUIDS

Perinatal Conditions

Perinatal conditions are deaths that include prematurity, low birth weight, placental abruption and congenital infections. Deaths due to perinatal conditions span the time period from the second trimester of pregnancy through one month after birth.

In the twenty years from 1990 through 2009 there were 1,041 child deaths due to perinatal conditions, representing 40% of all natural deaths and 29% of all Sacramento County child resident deaths. Known risk factors were present in 446 of the 1,041 (43%) child deaths due to perinatal conditions from 1990 through 2009 and are as follows²⁰:

- ❖ 227 decedents (22%) had a family history of abuse and neglect on the decedent or sibling
- ❖ 154 decedents (15%) had a family history of alcohol and drug use
- ❖ 116 decedents (11%) had family history of violent crime including domestic violence
- ❖ 49 mothers of decedents (5%) had documented lack of/inadequate prenatal care during pregnancy

²⁰ The total number of risk factors exceeds the number of perinatal condition deaths with risk factors, because in some child deaths more than one risk factor is present.

Congenital Anomalies

Definition: Abnormal intrauterine development of an organ or structure; commonly referred to as "birth defects". Congenital - A condition that exists at birth, and usually before birth, regardless of its causation. Anomalies - Marked deviations from the normal standard, especially as a result of congenital defects. These conditions are acquired during the development of the fetus and are generally attributed to heredity/genetics.

Congenital anomalies include fatal birth defects such as, structural heart defects, neural tube defects such as anencephaly, and chromosomal abnormalities such as down syndrome. The underlying causes of death in this category are generally attributed to heredity and/or genetics.

In the twenty years from 1990 through 2009 there were 581 child deaths due to congenital anomalies, representing 22% of the 2,587 natural deaths and 16% of the 3,633 Sacramento County child resident deaths. Known risk factors were present in 122 of the 581 (21%) child deaths due to congenital anomalies from 1990 through 2009 and are as follows:

- ❖ 60 decedents (10%) had a family history of alcohol and drug use
- ❖ 43 decedents (7%) had family history of violent crime including domestic violence
- ❖ 19 mothers of decedents (3%) had a documented lack of/inadequate prenatal care during pregnancy

Infant Sleep-Related Deaths, Including Sudden Infant Death Syndrome (SIDS)/ Sudden Unexpected Infant Death Syndrome (SUIDS), Undetermined, and Other Infant-Sleep Related Deaths

Infant sleep-related deaths consist of children under the age of one who die while sleeping. In the twenty years from 1990 through 2009, there were 420 infant sleep-related deaths, including 319 SIDS deaths, 28 SUIDS deaths, 63 infant sleep-related deaths of an undetermined manner and ten infant sleep-related deaths in "other" categories such as suffocation and infections. An extensive review of these deaths can be found in Chapter III Demographics.

Deaths of Undetermined Manner

In the twenty years from 1990 through 2009 there were 101 deaths of an undetermined manner, representing 3% of all deaths. Of the 101 undetermined manner decedents 84 (83%) were infants age zero through one. Of these 84 infant deaths 63 (75%) were sleep-related. More information can be found regarding these infant sleep-related deaths in Chapter III Demographics.

Chapter III

Demographics

Chapter Three

Demographics

The Sacramento County CDRT collects a variety of demographic information on each child’s death. Two key demographics included in this chapter are decedent age and race/ethnicity. It is important to note that the identified race for each child is captured from the death certificate, which is determined by the family of the child.

Child Deaths by Age

Figure 18 and Table I detail the number of child deaths by age for the period between 1990 and 2009. It is important to note that from 1990 through 2009 there were 97 Sacramento County resident child deaths of which the age of the child was unknown. Therefore, the total of 3,536 is used in this section of the report instead of the twenty year total of 3,633 Sacramento County resident child deaths. From 1990 through 2009, 60% (2,111 of 3,536) of Sacramento County resident child deaths were infants under 1 year of age. Children between 1 and 4 years of age comprise 13% (475 of 3,536) of all child deaths, making children birth through 4 years of age 73% (2,586 of 3,536) of all child deaths. Youth between 10 and 17 years of age comprise 20% (710 of 3,536) of all child deaths. Children between 5 and 9 years of age comprise 7% (240 of 3,536) of all child deaths.

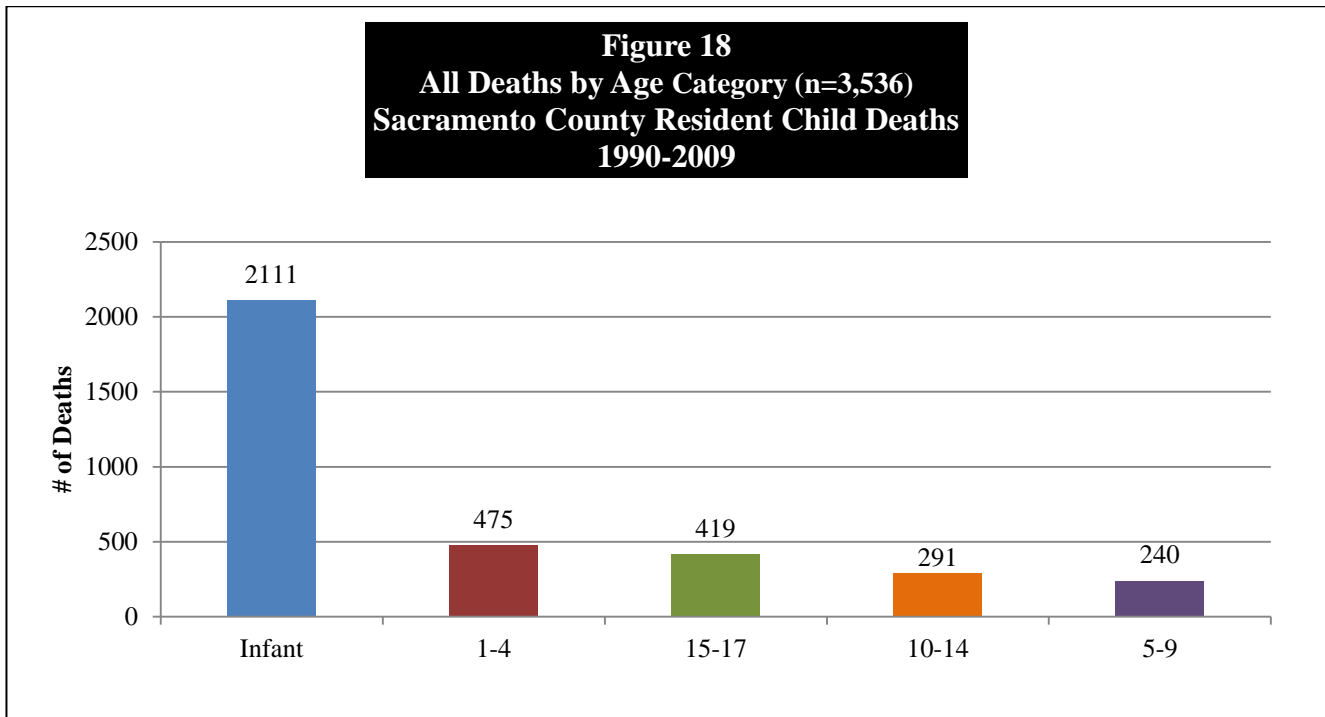


Table I Child Deaths by Age Category (n=3,633) Sacramento County Resident Child Deaths 1990-2009			
Age Category	# Child Deaths	% of Child Deaths	% Child Population (90-09) ²¹
Infants	2,111	60%	6%
1-4	475	13%	22%
15-17	419	12%	16%
10-14	291	8%	28%
5-9	240	7%	28%
Unknown Age	97	--	--
Totals	3,633	100%	100%

²¹ Data Source: California Department of Public Health, Safe and Active Communities Branch Report generated from <http://epicenter.cdph.ca.gov> on: October 24, 2011

Infant Deaths

In the review of child deaths the Sacramento County CDRT has consistently found that infants represent the population with the highest mortality rate and frequency of death while representing only 6% of the general child population.

Table J details the manner of death for all 2,111 infants. The largest category of death in infant deaths was perinatal conditions (47%) followed by congenital anomalies (20%) and Sudden Infant Death Syndrome (SIDS)/ Sudden Unexpected Infant Death Syndrome (SUIDS) (16%).

Table J Infant Deaths by Category (n=2,111) Sacramento County Child Residents 1990-2009		
Category of Deaths	# of Deaths	% of Infant Deaths
Perinatal Conditions	981	47%
Congenital Anomalies	425	20%
SIDS	319	15%
Undetermined Manner	84	4%
Infections	69	3%
Other	53	3%
CAN Homicide	41	2%
Respiratory	31	1%
SUIDS	28	1%
Undetermined Natural	16	1%
Suffocation	15	1%
Cancer	14	1%
Undetermined Injury	10	1%
MVC Driver/Occupant	8	0%
Drowning	6	0%
Other -Injury	4	0%
MVC Pedestrian	3	0%
Burn/Fire	2	0%
Third Party Homicide	2	0%
Total	2111	100%

Risk Factors

As previously stated, in order to detect trends and form prevention strategies at a local level, the CDRT investigates the family environments of all children who die in Sacramento County. Evidence of risk factors or family stressors such as substance abuse, prior child abuse, domestic or other violence, and mental illness are collected by CDRT members in preparation for each review. At least one known risk factor was present in 868 (41%) of the 2,111 infant deaths and are as follows²²:

- ❖ 461 decedents (22%) had a family history of prior abuse and neglect on the decedent or a sibling
- ❖ 409 decedents (19%) had a family history of alcohol and drug use
 - 107 decedents (5%) had drug or alcohol involvement at the time of death
- ❖ 267 decedents (13%) had a family history violent crime including domestic violence.

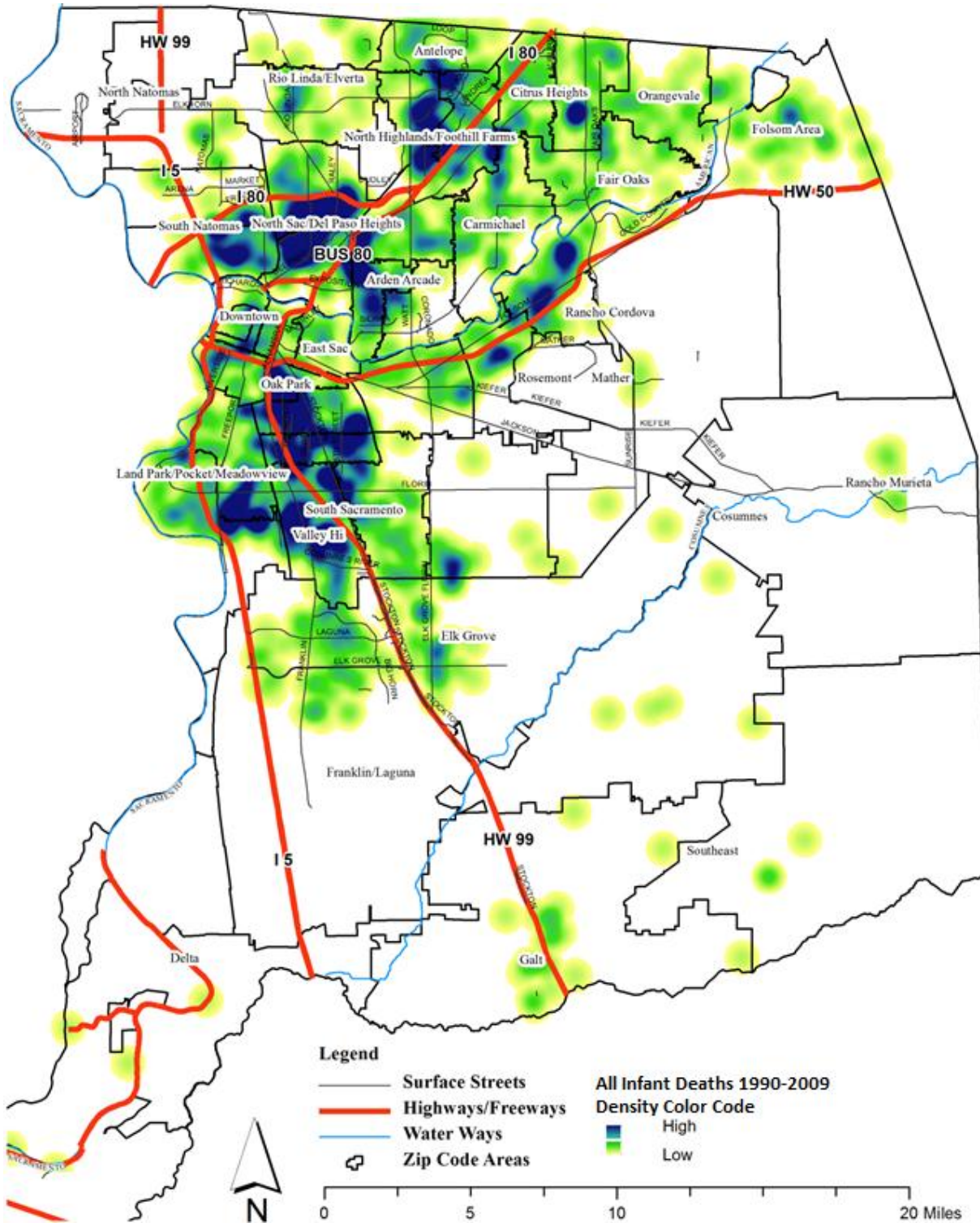
Geographic Distribution

Map ix details the geographic distribution of infant deaths throughout Sacramento County. The incidence of infant deaths is most frequent in areas where the map shows a dark blue. Infant deaths occur throughout the county with concentration in areas of higher population including Arden Arcade, Citrus Heights, Del Paso Heights, Fruitridge, North Highlands/Antelope, North Sacramento, Oak Park, Rancho Cordova, Rosemont and South Sacramento²³.

²² The total number of risk factors exceeds the number of infant deaths with risk factors, because in some child deaths more than one risk factor is present.

²³ Neighborhoods are listed in alphabetical order.

Map ix
All Infant Deaths; Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Infant Sleep-Related Deaths, Including Sudden Infant Death Syndrome (SIDS)/ Sudden Unexpected Infant Death Syndrome (SUIDS), Undetermined, and Other Infant-Sleep Related Deaths

Two month old Melissa lived with her ten year old sibling, father and mother. Melissa's mother suffered from postpartum depression, was bipolar and had a history of anxiety. Her father abused marijuana and was often drunk. Melissa and her mother laid down for a nap during the daytime on an adult bed in her parent's bedroom. During his lunch break, Melissa's father came home to find Melissa face down, with her face pressed into a pillow a few inches from her mother. She was unresponsive. Melissa died from Sudden Unexpected Infant Death Syndrome (SUIDS) while bed sharing.

Overview

On the next pages, information is provided on infant sleep-related deaths due to the historically high number of infant sleep-related deaths in Sacramento County. Infant sleep-related deaths are those deaths where a child less than one year old dies while sleeping. This includes Sudden Infant Death Syndrome (SIDS), Sudden Unexpected Infant Death Syndrome (SUIDS), deaths of an Undetermined Manner and other infant sleep-related deaths depending on circumstances surrounding the infant death.

Definitions for SIDS, SUIDS and infant sleep-related deaths of an Undetermined Manner are as follows:

Sudden Infant Death Syndrome (SIDS): *The sudden death of an infant under one year of age, which remains unexplained following an investigation of the case, including the performance of a complete autopsy and review of the clinical history. Section 27491.41 of the California Government Code defines SIDS as "the sudden death of any infant that is unexpected by the history of the infant and where a thorough postmortem examination fails to demonstrate an adequate cause of death."*

Sudden Unexpected Infant Death Syndrome (SUIDS): *The sudden unexpected/unexplained infant death (SUID) applies to the death of an infant less than one year of age, in which investigation, autopsy, medical history review, and appropriate laboratory testing fails to identify a specific cause of death. SUIDS includes cases that meet the definition of Sudden Infant Death Syndrome (SIDS). If there are external or exogenous stressors [risk factors] that a medical examiner would like to incorporate on a death certificate, such as co-sleeping or bed sharing, they may be added to the cause of death, such as in the following way: Sudden unexplained (or unexpected) infant death while bed-sharing.*

Undetermined Manner: *Death in which the manner or how the death occurred is unknown and the cause of death may or may not be medically identifiable.*

Undetermined Natural: *Natural death in which the cause of death may not be medically identifiable.*

Of the 2,111 infant deaths from 1990 through 2009, 420 (20%) were infant sleep-related deaths, including 319 SIDS deaths, 28 SUIDS deaths, 63 infant sleep-related deaths of an undetermined manner and ten infant sleep-related deaths in "other" categories such as suffocation and infections. Figure 19a shows the variation in the frequency of all infant sleep-related infant deaths by year.

From 2003 to 2006, the number of infant sleep-related deaths decreased by nearly half. Concurrently, from 2004 through mid-2007 there was a marked increase in public education campaigns focusing on the importance of infant safe sleeping in specific zip codes with the highest rates of infant sleep-related deaths. In mid-2007, some of these infant safe sleeping programs had ended. This coincided with an increase in infant sleep-related deaths in the same zip codes.

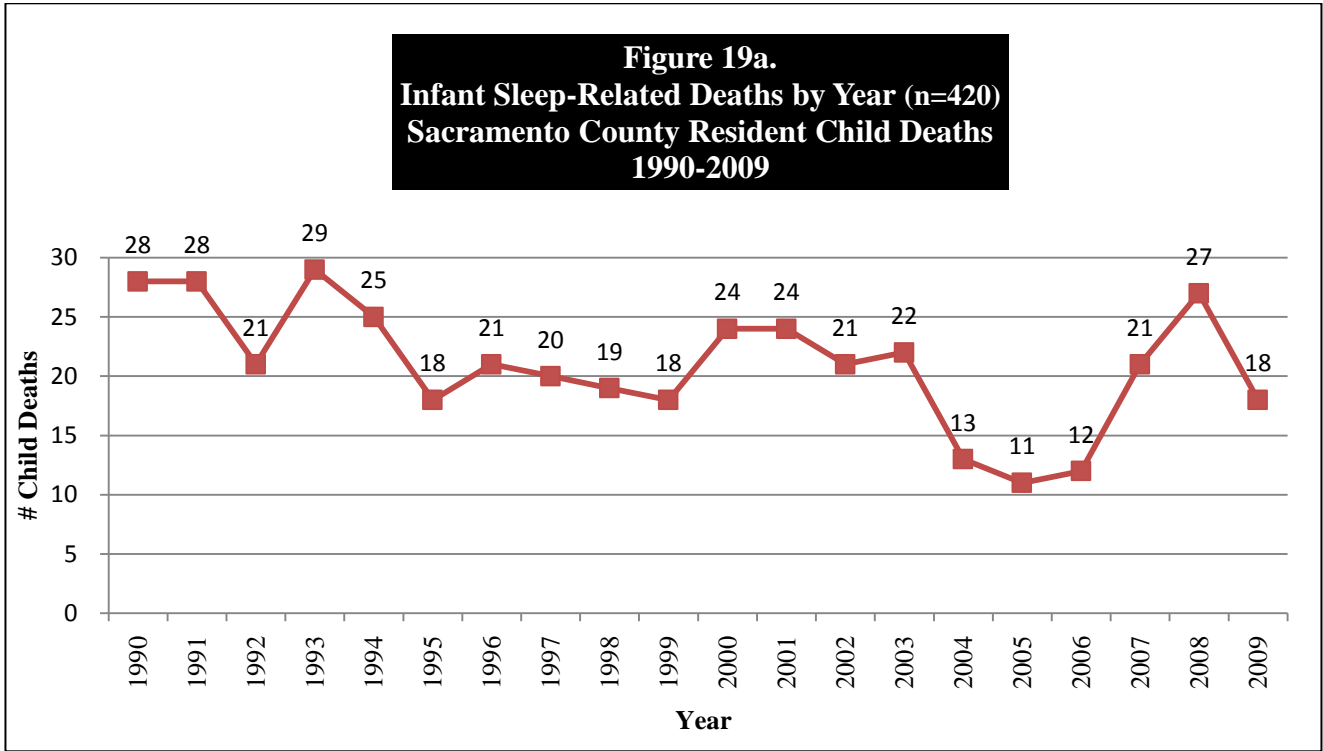
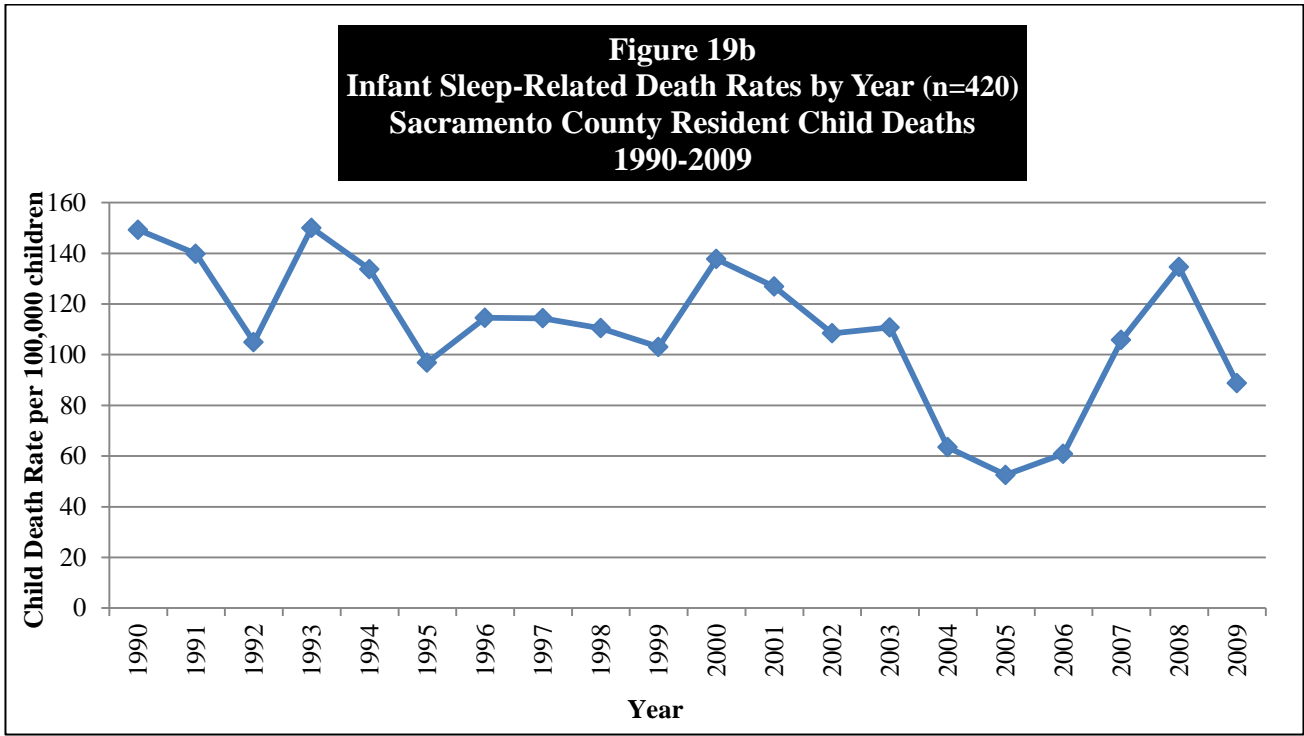
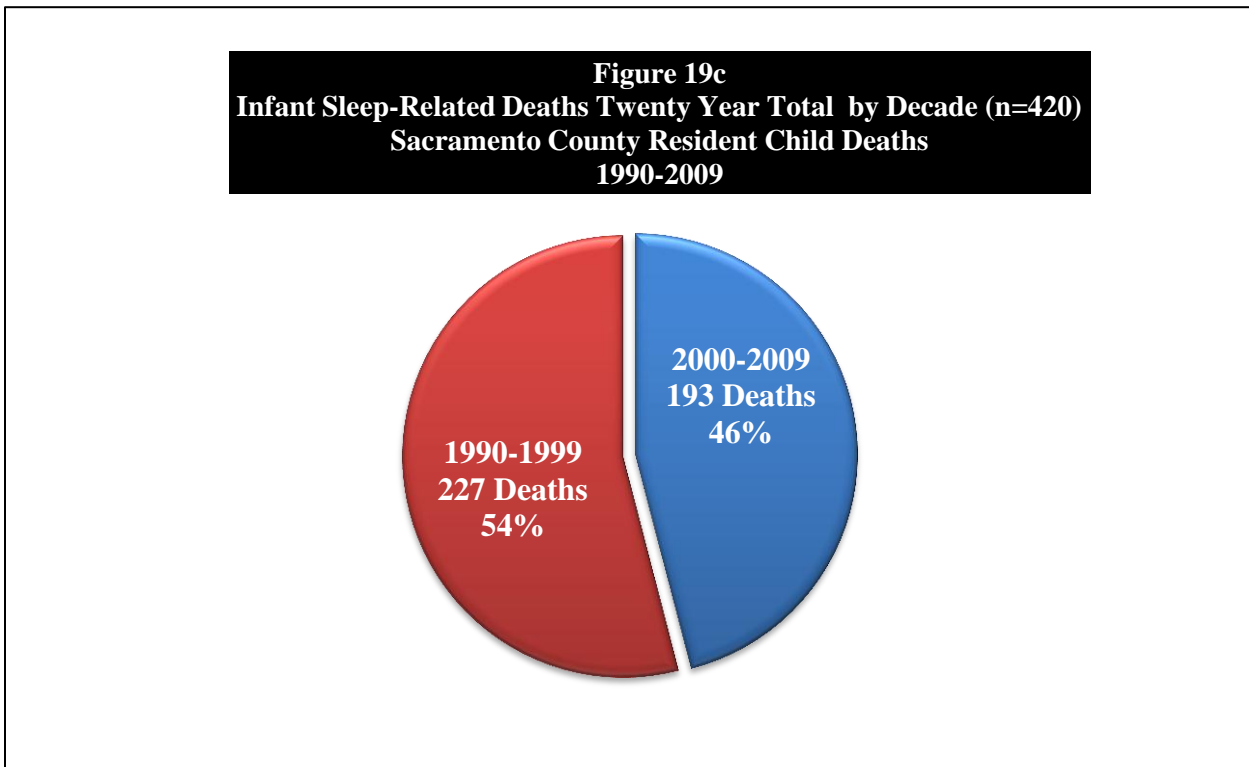


Figure 19b shows the rate changes for infant sleep-related deaths from 1990 through 2009. A downward trend is observed between 2000 and 2005, at which time the rate dropped from 138.00 to 53.00 deaths per 100,000 infants in 2005. After 2005, the rate increased reaching a peak in 2008 at 135.00 deaths per 100,000 infants.



The overall number of infant sleep-related deaths is lower in the 10 year period from 2000 through 2009 relative to 1990 through 1999. A visual breakdown of this is shown in Figure 19c.



Risk Factors

Risk factors is the broad term used to describe a variety of social, economic and/or demographic circumstances or other elements that may be associated with a higher risk of negative outcomes for children. A variety of risk factors have been tracked when investigating deaths of infants due to sleep-related deaths, including SIDS/SUIDS, and deaths due to an undetermined manner. These risk factors, while present in many infant deaths, do not imply causation. While tracking these risk factors it is important to understand all circumstances underlying the death of an infant. The tracking of these risk factors has only been done in a systematic way from 1999 through 2009. It is also important to note that the risk factors described below are not representative of all possible risk factors found in the homes of the victims, but only those associated with infant sleep-related deaths, including specific risk factors identified by the American Academy of Pediatrics.²⁴

Risk factors associated with infant sleep-related deaths were extensively collected by the Sacramento County CDRT from 1999 through 2009. Through each child death review, it is evident that more than one risk factor is often present in each infant sleep-related death. Table K details the known risk factors involved in all infant sleep-related deaths from 1999 through 2009²⁵.

Risk Factor	#	%
Non-Infant Bed (couch, floor, adult bed, etc)	146	35%
Familial History of Alcohol and/or Drugs	103	25%
Co-Sleeping	96	23%
Prone or Side Sleeping Position	96	23%
Familial History of Violent and/or Non-violent crime	69	16%
Familial History of Domestic Violence	46	11%
Drugs and/or Alcohol Involved at Time of Death	31	7%
Exposure to Second Hand Smoke	31	7%
History of Poverty, Homelessness and/or TANF	30	7%

In 2004, the Sacramento County CDRT began to collect additional data on infant sleep-related deaths. This expanded infant sleep-related risk factor data to include obstruction by blankets and/or pillows, other individuals sharing a sleeping area or excessive items in a crib. From 2004 through 2009, there were 103 infant sleep-related deaths, of which 96 (93%) had at least one known risk

²⁴ The American Academy of Pediatrics (AAP) lists several factors related to the sleep environment as being associated with a higher risk of SIDS/SUIDS and other infant sleep-related deaths, such as being placed to sleep in a prone position, a soft sleep surface, co-sleeping, or being put to sleep with items that could cover the head or face.

²⁵ The total number of risk factors exceeds the number of infant sleep-related deaths with risk factors, because in some child deaths more than one risk factor is present.

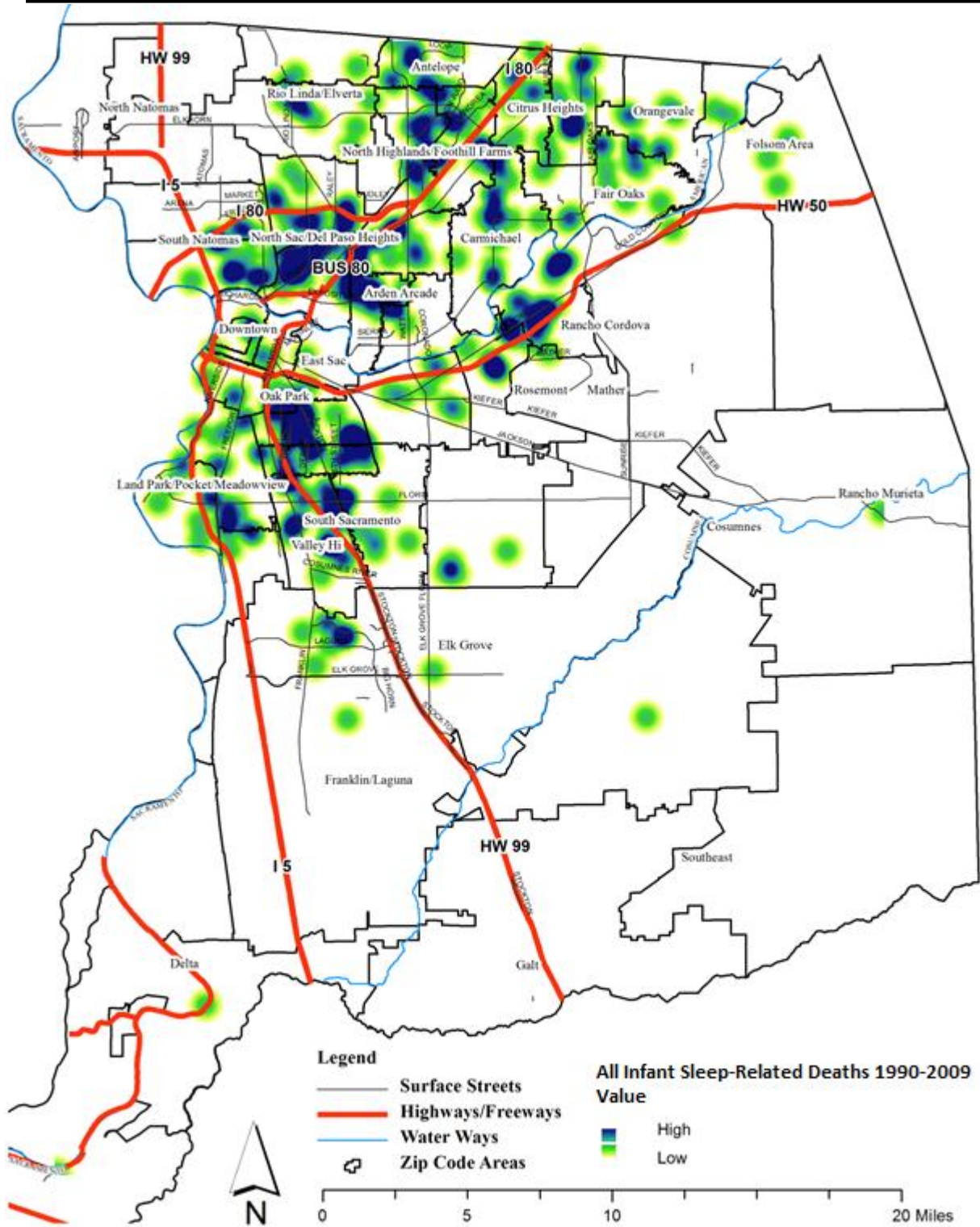
factor present. During this time period, 31% (30 of 96) of infants that died due to infant sleep-related causes were known to be obstructed by blankets and/or pillows, to have shared a sleeping area with another individual(s) or have excessive items in their crib.

Geographic Distribution

Map x shows the geographic distribution of infant sleep-related deaths between 1999 and 2009 for all Sacramento County child residents. The incidence of infant sleep-related deaths is most frequent in areas where the map shows a dark blue. Neighborhoods /with the highest incidence of infant sleep-related deaths include Antelope, Arden Arcade, Carmichael, Citrus Heights, Del Paso Heights, Fair Oaks, Franklin/Laguna, Meadowview, North Highlands, North Sacramento, Oak Park, Rancho Cordova, Rio Linda, South Natomas, South Sacramento, and Valley Hi²⁶.

²⁶ Neighborhoods are listed in alphabetical order.

Map x
Infant Sleep-Related Deaths; Kernel Density Distribution
Sacramento County Resident Child Deaths
1990-2009



Infant Deaths of Undetermined Manner

In this category the manner of death could not be determined due to uncertainty regarding how the fatal condition developed or was inflicted. Deaths that had insufficient information to assign a manner included in this category are infant sleep-related deaths where there was not enough evidence to determine the manner and/or cause of death, and risk factors present precluded a diagnosis of SIDS or SUIDS.

From 1990 through 2009, there were 63 infant sleep-related deaths of an undetermined manner. In 2004 the Sacramento County CDRT began to collect additional data on infant sleep-related deaths. This data collection expansion included information regarding infant sleep-related deaths of an undetermined manner. From 2004 through 2009, there were 36 infant sleep-related deaths of an undetermined manner, of which 34 (94%) had at least one known risk factor present²⁷:

- ❖ 29 (81%) were not sleeping a crib or bassinette
 - 21 (58%) were sleeping in adult bed
- ❖ 26 (72%) were co-sleeping
 - 25 (69%) were sleeping with at least one adult
- ❖ 6 (17%) were placed to sleep on their side or stomach
 - 11 (31%) were found on their stomach
- ❖ 4 (11%) had a known obstruction

Youth Deaths

This section summarizes the findings by the Youth Death Review Subcommittee (YDRS); a subcommittee of the CDRT formed in 2007 to specifically review Sacramento County resident deaths of youth between 10 and 17 years of age.

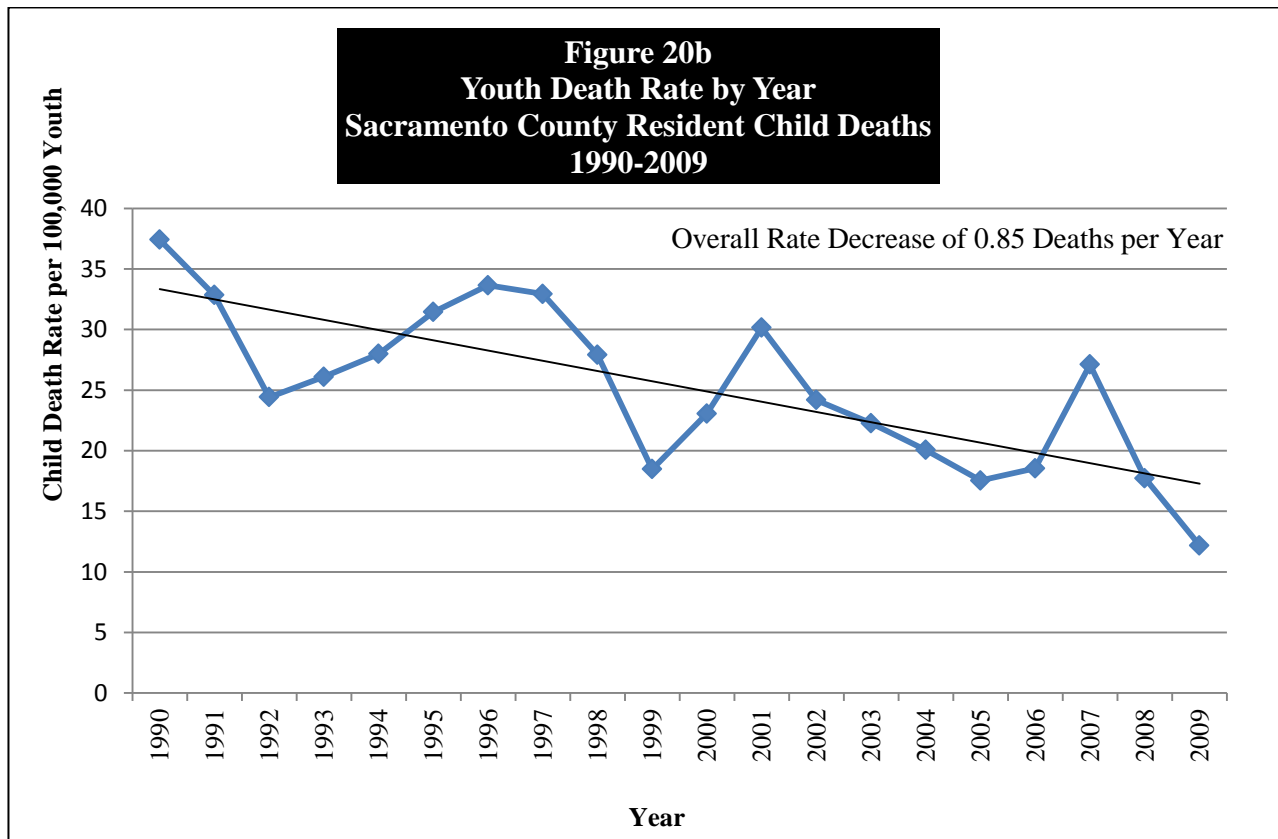
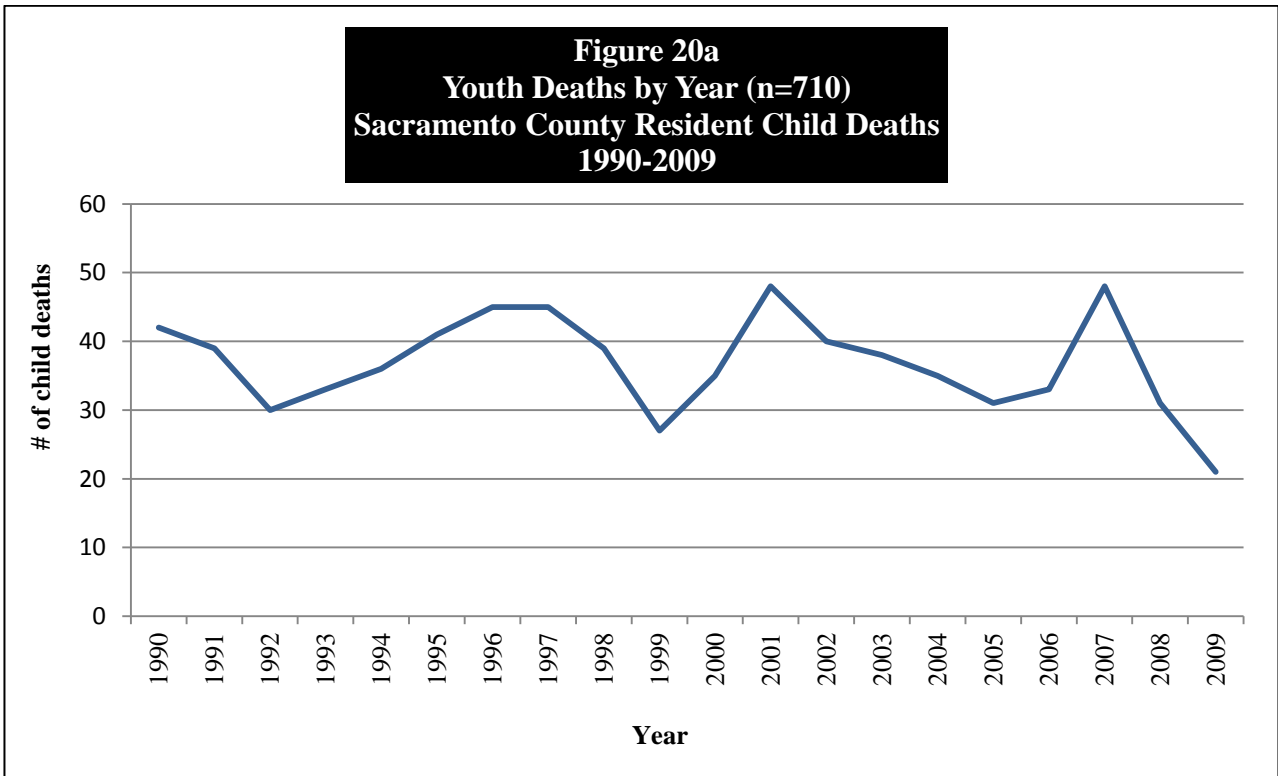
From 1990 through 2009 there were 710 youth deaths, ages 10 through 17, representing 20% of all 3,633 Sacramento County child resident deaths. The Sacramento County CDRT has found that youth between 10 and 17 years of age present unique risk factors and manners of death. In the twenty year period detailed here, youth represent 57% (542 of 945) of all injury-related deaths including 100% of all suicide deaths (90 of 90), 89% of all third-party homicide deaths (123 of 138) and 65% of all Motor Vehicle Collision (MVC) deaths (176 of 272).

Youth Frequency and Rate

Figure 20a shows the frequency of youth deaths by year. The frequency of youth deaths varies significantly but maintains an overall average around 37 youth deaths per year. Figure 20b displays the rate of youth deaths by year per 100,000 children between 10 and 17 years of age. Overall,

²⁷ The total number of risk factors exceeds the number of infant sleep-related deaths of an undetermined manner with risk factors, because in some child deaths more than one risk factor is present.

from 1990 through 2009, the rate shows significant variation with an overall downward trend of nearly one death each year.



Cause and Manner of Youth Deaths

Table L details the manner of death for the 710 youth deaths from 1990 through 2009. The most common manner of death for youth in this period was MVC's at 25% (176) followed by third-party homicides at 17% (123).

Table L Youth Deaths by Cause and Manner (n=710) Sacramento County Resident Child Deaths 1990-2009		
Category		
Natural Causes	#	%
Perinatal Conditions	7	1%
Congenital Anomalies	51	7%
Cancer	80	11%
Infections	15	2%
Respiratory	14	2%
Total Natural Causes	167	24%
Injury-Related Causes		
	#	%
Homicide	138	19%
<i>CAN Homicide</i>	<i>(15)</i>	<i>2%</i>
<i>Third-Party Homicide</i>	<i>(123)</i>	<i>17%</i>
Motor Vehicle Collision	176	25%
<i>Driver/Occupant</i>	<i>(113)</i>	<i>15.9%</i>
<i>Pedestrian</i>	<i>(42)</i>	<i>6%</i>
<i>Bike</i>	<i>(21)</i>	<i>3%</i>
Drowning	32	4.5%
Suicide	90	13%
Other - Injuries	94	13%
Burn/Fire	2	.3%
Suffocation	4	.5%
Poisoning/ Overdose	6	.8%
Total Injury-Related Causes	542	76%
Undetermined Manner	1	0%
TOTAL	710	100%

Child Deaths by Race and Ethnicity

There are differences in the number and proportions of child deaths among Sacramento County's various racial and ethnic populations. Table M represents the Sacramento County child death rate and population rates of Sacramento County child residents. It is important to note that during each child death case review the race/ethnicity of each decedent is recorded based on the child's death certificate. This is done in order to better understand how different race groups are represented across all manner of child deaths.

Frequency and Death Rates

Table M details the number, percent, and rate of child deaths by each race/ethnic group. The table also lists the percent of the child population represented by each racial group in Sacramento County across the twenty year period from 1990 through 2009. The most notable difference between the percentage of deaths and the percentage of the child population was found in the African American population. African Americans represent a significantly larger percent of all child deaths, 22% (816 of 3,633) compared to the African American child population (12%). Hispanics represent a significantly smaller percent of all child deaths, 16% (575 of 3,633), than the Hispanic child population (22%). Figure 21 shows annual child death rates by race.

Race/Ethnicity	# of Child Deaths	% of Child Deaths	Death Rate per 100,000 Children	% Race in Child Population
African American	816	22%	102.0	12%
Asian	402	11%	44.5	13%
Caucasian	1592	44%	48.5	48%*
Hispanic	575	16%	38.3	22%
Multiracial	130	4%	48.0	4%***
Other/Unknown	118	3%	-- ²⁸	1%**
Total (Rate=Average)	3,633	100%	53.2	100%

*Includes other and unknown races as reported by data source

** Includes Native American and unknown race

*** Multi-racial data collection was started in 2003 by the CDRT and Public Health

²⁸ Due to smaller populations and inconsistencies in data categorization, the child death rate for the other/unknown race group is not included in this report.

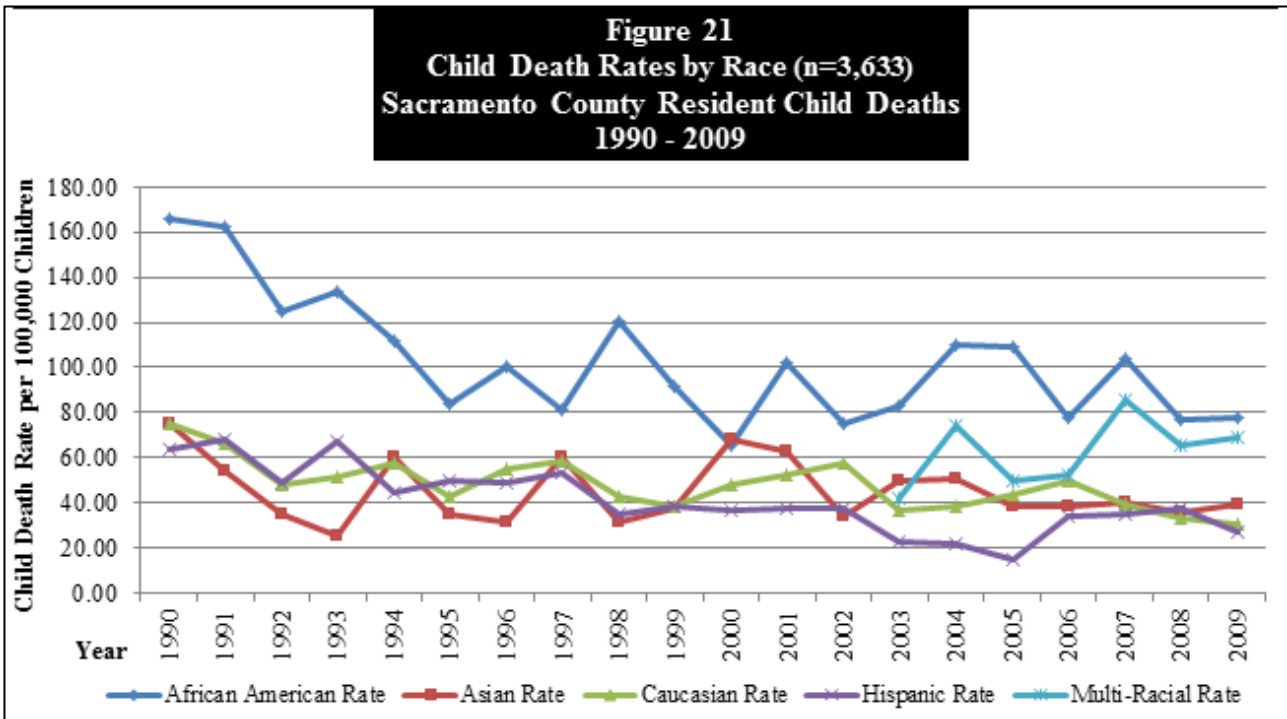
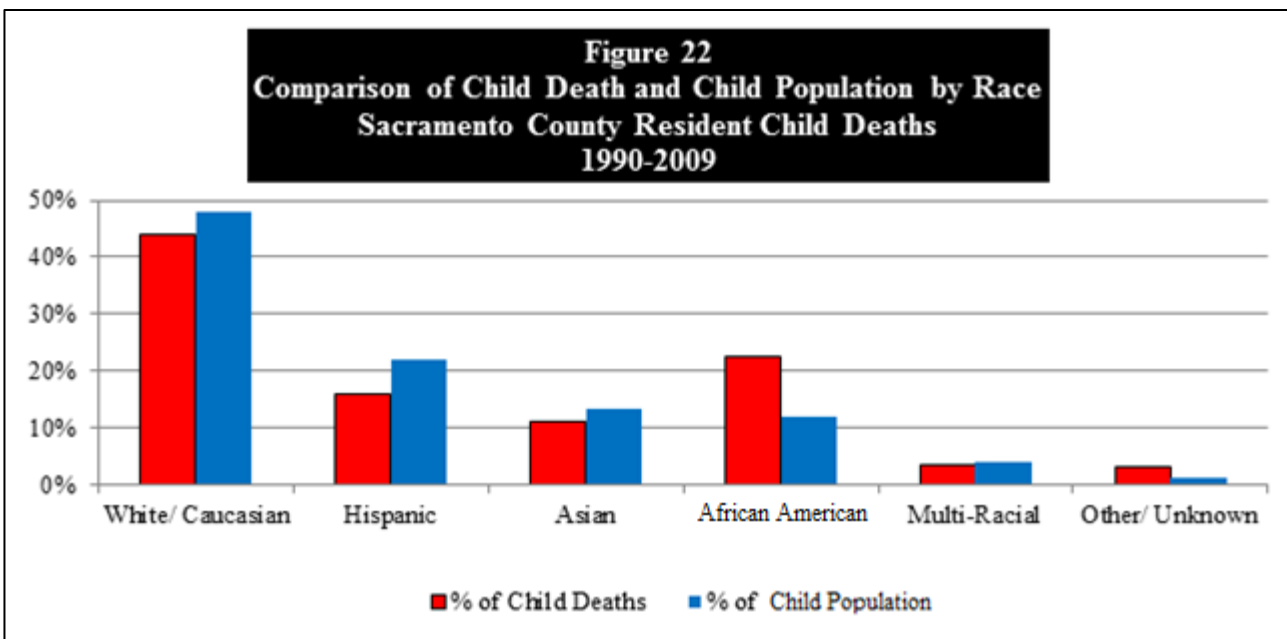


Figure 22 shows the representation of each race across all child deaths (in red) compared to the representation of race in the Sacramento County resident child population from 1990 through 2009. African Americans have a higher representation across child deaths while Hispanic and White race groups have lower representation relative to their child population. Asian and multi-racial representation in child deaths is approximately on par with their child population figures.



For Sacramento County child residents from 1990 through 2009, Figure 23 shows the actual percentage difference for each race group between their percent of child population, and their percent of all child deaths. For example, African American children represented 12% of the child population and 22% of all child deaths; for a difference of 10%. With the exception of Other/Unknown, children in all other race groups die at a percent less than their percent of the child population.

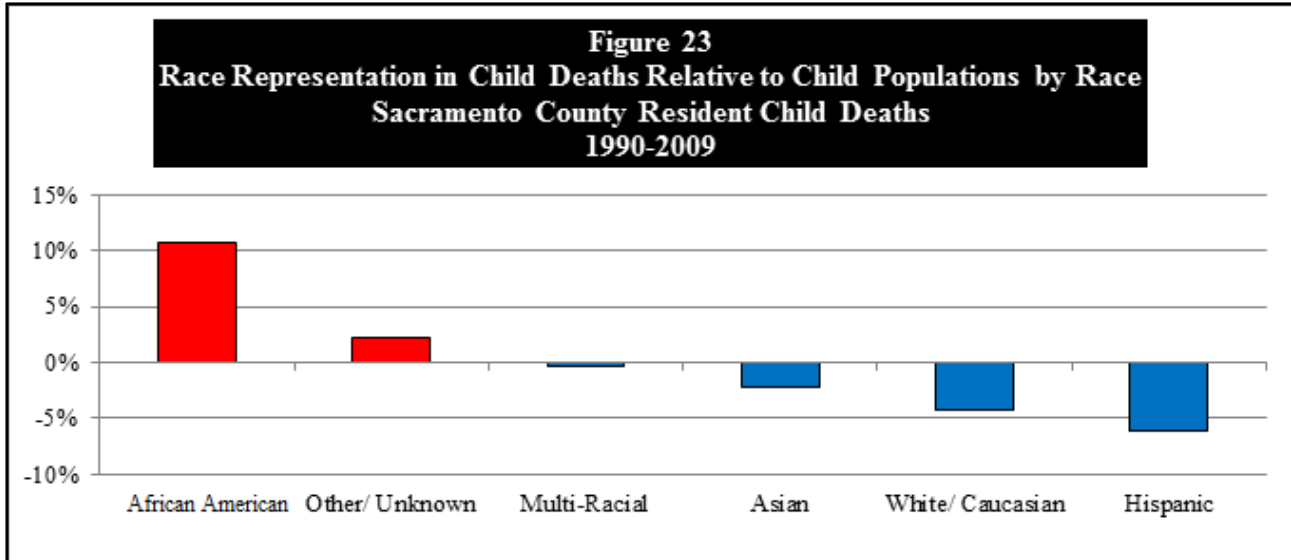
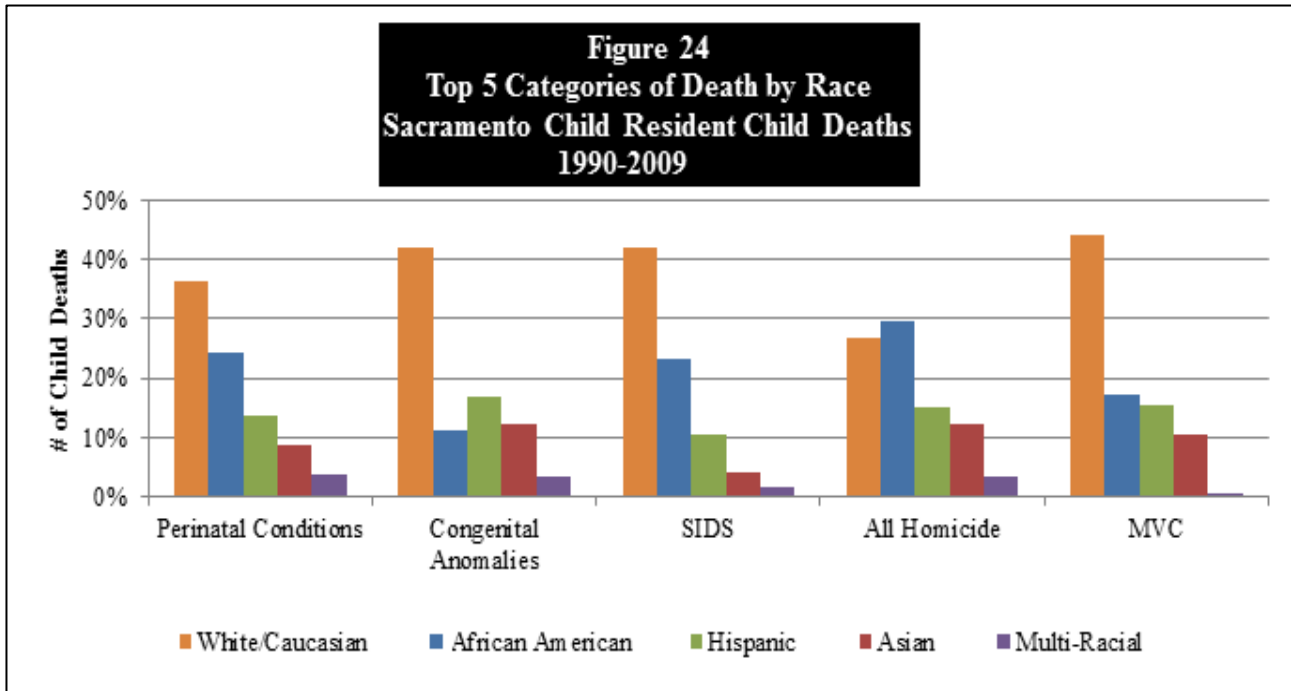


Figure 24 shows the distribution of the top five categories of child death by race. Overall Caucasians represent the largest number of deaths in all categories except homicides, where African Americans are the highest. African Americans have the second highest number of deaths in perinatal conditions, SIDS, and MVC categories. Hispanics have the second highest number of deaths in the congenital anomalies category.

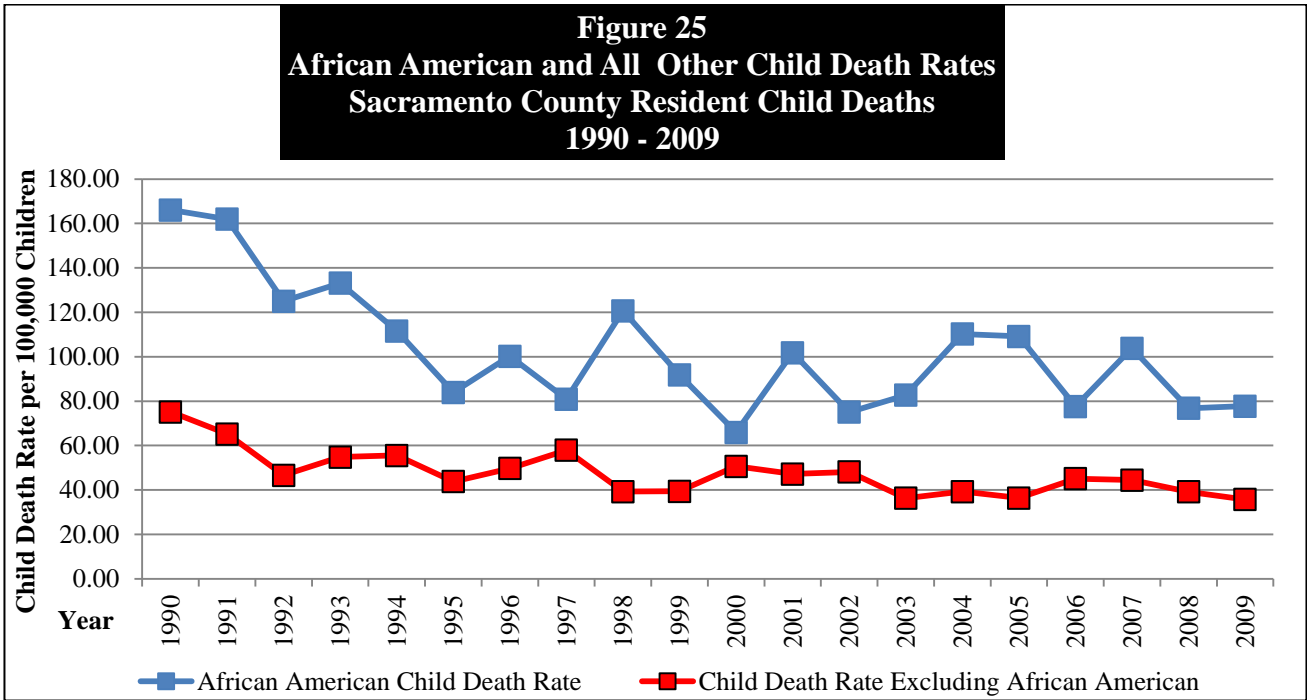


African American Disproportionality

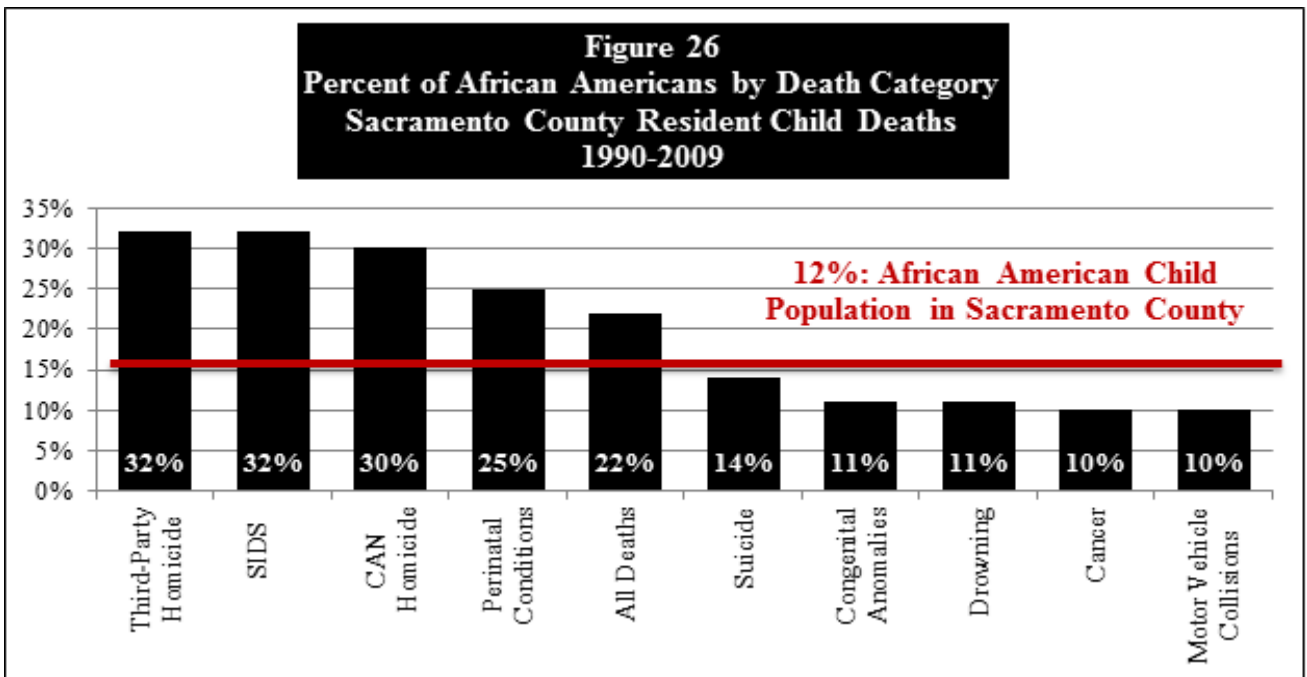
Each year the Sacramento County CDRT has found that African American children consistently die at rates higher than expected relative to the ratio of the child population represented by this group. From 1990 through 2009, African American children have consistently died at a disproportionate rate of 102.0 per 100,000 children compared to Caucasian children who died at a rate of 48.5 per 100,000 children. Since 1990, African American children represented 12% of the child population and 22% of all child deaths (816 of 3,633).

Overall, African American child deaths have steadily decreased at a rate of 0.85 deaths per year or 3.1 deaths per 100,000 children each year during the twenty year period. In spite of this consistent decrease, each year the proportion of African American deaths remains higher relative to the general child population in both frequency and rate.

Figure 25 depicts the death rate for African American children in Sacramento County and all other races for the period from 1990 through 2009. Every year, on average, the African American child death rate is higher than all other races.



As shown in Figure 26, African American children have a higher than average frequency of death across multiple manners of death relative to the child population of African American children. The red population line is present to allow easy comparison to the proportion of African American children represented in child death categories. Thirty-two percent (32%) of all third-party homicide victims are African American. Thirty-two percent (32%) of all SIDS deaths are African American infants. Thirty percent (30%) of all CAN homicide victims are African American children. Twenty-five percent (25%) of all perinatal condition deaths are African American infants. Twenty-five percent (25%) of all perinatal condition deaths are African American infants. Twenty-five percent (25%) of all perinatal condition deaths are African American infants. Twenty-five percent (25%) of all perinatal condition deaths are African American infants.



Chapter IV

The Sacramento County Child Death Review Team

Chapter Four

The Sacramento County Child Death Review Team

History and Background

In November of 1988, a Sacramento County Board of Supervisors resolution directed the Child Abuse Prevention Council of Sacramento, Inc. (CAPC) to develop and coordinate an interagency team to investigate child abuse and neglect deaths. This action reflected a growing awareness that child abuse and neglect deaths are often difficult to identify and prosecute without a coordinated multi-agency investigation. The Board of Supervisors' resolution was preceded by specific requests to CAPC from the offices of the District Attorney, the County Sheriff and the Coroner to establish such a team.

The ability to establish confidential Child Death Review Teams was provided in 1988 by revisions to the State Penal Code (Section 11166.7) and the State Welfare and Institution Codes (Sections 830 and 10850.1). These statutes afford the confidentiality necessary to review cases without bias from outside pressures and influences. Under the leadership of Dr. Michael Reinhart, Medical Director of the Child Protection Center at the University of California Davis Medical Center, Formation Committee members worked to establish the precedents for the sharing of confidential information and the written justifications needed to appoint and staff a Sacramento County Child Death Review Team. Dr. Marcia C. Britton, Director of the Child Health and Disability Prevention Program of Sacramento County, obtained all of the County approvals and authorizations necessary to implement the team. After a year of planning, the Sacramento County Child Death Review Team began functioning in November of 1989.

In designing Sacramento County's local team, the Formation Committee had the foresight to broadly define the team's mission, ensuring that all child deaths would be reviewed and investigated. This model was different from most other teams in existence at the time. Typically, other large county teams focused exclusively on suspicious child abuse and neglect homicides or reviewed the deaths of a limited number of children in a narrow range of ages. The Sacramento team remains unique in that it is one of the only large county models that review the death of all children birth through 17 years of age.

Mission Statement

The mission of the Sacramento County Child Death Review Team is to:

- Ensure that all child abuse related deaths are identified.
- Enhance the investigation of all child deaths through multi-agency review.
- Develop a statistical description of all child deaths as an overall indicator of the status of children.
- Develop recommendations for the prevention and response to child deaths based on the reviews and statistical information.

Membership

The Sacramento County Child Death Review Team had consistent representation from 1990 through 2009 from the following agencies:

California Highway Patrol

Child Abuse Prevention Council of Sacramento, Inc.

Kaiser Permanente

Mercy San Juan Medical Center

Sacramento County Metropolitan Fire Department

Sacramento City Fire Department

Sacramento City Police Department

Sacramento County Coroner's Office

Sacramento County Department of Health and Human Services:

California Children's Services

Child Protective Services

Disease Control and Epidemiology

Public Health Nursing

Sacramento County District Attorney's Office

Sacramento County Probation Department

Sacramento County Sheriff's Department

Sutter Memorial Hospital

University of California Davis Medical Center

Lists of Sacramento County Child Death Review Team current members, formation members, past members, and the Confidentiality Agreement can be found in the Appendices.

Review Process

The Child Death Review Team (CDRT) meets monthly to review deaths of all children birth through 17 years of age in Sacramento County. The deaths are identified by the Vital Records Unit of the Sacramento County Department of Health and Human Services, and the death certificates are forwarded to the CDRT Staff who prepares them for review. Team members compile pertinent information their agency may have regarding each case. This information is brought to the monthly meetings in order to identify potential abuse/neglect issues. The team also identifies trends in other types of child deaths in order to address needs in prevention efforts. The information is stored in a secure centralized database and data are analyzed in the aggregate to describe the information and identify any pertinent trends.

Because of the confidential nature of the information discussed, each team member is required to sign a confidentiality agreement, which prohibits dissemination of any information discussed by the team unless otherwise provided by law.

In addition to the review of new cases, the status of any ongoing investigations is reviewed monthly and additional information needs are identified. Non-member agencies may be contacted to provide information related to the team's investigation. All cases remain under review until the team agrees that the underlying cause of death has been determined as accurately as possible.

Methods

Deaths are categorized by cause and by manner. Both are crucial to the investigation and analysis of deaths. The following text defines and compares these two often-confused terms.

Causes of death, listed on the death certificate, are medical findings coded according to the International Classification of Diseases, tenth edition (ICD-10).

A second finding listed on the death certificate describes the mode or manner of death, which is an investigative finding.

Manner of death falls into one of six categories: Natural, Accident, Suicide, Homicide, Pending Investigation, and Could Not Be Determined. In those cases where the cause of death is due to a natural disease process, the manner is listed, usually, as “Natural.” Injury-related deaths generally fall into one of the following three categories: “Accident,” “Suicide,” or “Homicide.”

To illustrate the difference between the manner and cause of death, consider a death certificate where the medical cause of death is “Gunshot wound of the head.” In this case, the wound could have been inflicted in one of four manners: “Accident,” “Suicide,” “Homicide” or “Undetermined.”

When there is confusion regarding how the fatal condition developed or was inflicted and the manner could not be determined with a satisfactory degree of certainty, the manner is listed as “Undetermined.” An example of a classification of this type could be found in a situation where a cause of death is listed as “Pulmonary embolism.” A pulmonary embolism can occur as a complication of an injury or it can occur naturally. Due to possible uncertainty regarding the formation of a pulmonary embolism, the manner could be listed as “Undetermined.”

The manner of death is an important consideration because prevention of child deaths, one of the central goals of the Sacramento County Child Death Review Team, relies on the ability to differentiate between intentional and unintentional deaths. For example, strategies designed to reduce the number of unintentional drug overdose deaths from accidental exposure or access to drugs, will differ from strategies designed to reduce intentional drug overdose deaths, such as suicide.

Report Strengths and Limitations

Better identification of child abuse and neglect deaths is the primary mission of the Child Death Review Team (CDRT). During the review process, the team focuses on any suspicious circumstances surrounding the death of a child. Because of the involvement of multiple agencies, the team is able to generate information that helps to clarify otherwise limited evidence of abuse. Such information can be critical to the death investigation and may ultimately result in a death certificate that more accurately reflects the occurrence of an abuse-related fatality.

As a result of this multi-agency investigation, the cause of death identified by the team, particularly in cases of child abuse and neglect homicide, may be more explicit than the cause of death assigned by the local physician or coroner. Based on the team's findings, a more accurate description of the occurrence of abuse-related deaths in Sacramento County can be provided by a Child Death Review Team report than the information provided by the death certificates filed with the State.

The Sacramento County Child Death Review Team is unique in its approach to investigating child deaths. By reviewing the circumstances surrounding each child death instead of sampling the childhood fatality population or focusing on suspicious cases only, the CDRT can capture a more detailed and accurate description of child mortality in Sacramento County. This broader understanding of child death and the ongoing identification and investigation of child abuse and neglect deaths has also provided for the development of effective prevention strategies.

Unfortunately, comparisons between Sacramento County and other jurisdictions are difficult. At the present time, there is no uniformity at the state and national levels in reporting, investigating and validating cases of child abuse and neglect and their resulting deaths. As a result, there is a significant undercount of the annual CAN-related deaths found in Vital Statistics Death Records.

The criteria for selecting cases to review are established by each county's team and very few teams review all child deaths. In addition, each team defines abuse and neglect-related deaths differently. Even though the State Child Death Review Council has published a definition of deaths related to abuse and neglect, the final decision is still made at the local level.

All of the children included in this report were Sacramento County residents at the time of their death or out-of-county residents whose injuries leading to death were sustained in Sacramento County. Other out-of-county cases are reviewed, but are not included in any analysis used to make inferences about Sacramento County children. Similarly, the team does not usually review cases of children who are Sacramento County residents but die in another county. Sacramento County does not receive these death certificates consistently, so these cases may or may not be included in this report. These factors may account for any discrepancy found when comparing the number of cases in this report to those recorded by the State Registrar for Sacramento County.

The development of the CDRT's Annual Report has been an evolving process. In 1996, the CDRT began following childhood fatality trends on an annual basis, which led to more comprehensive record keeping of all child deaths. Other data, such as injury type and demographics, comes primarily from death certificates and is available for all cases reviewed since 1990. The differences found in the availability and consistency of information is due to the different time periods used to present prior years' data.

Tables

Table N
Number of Natural Deaths According to Category
Sacramento County Resident Child Deaths
1990-2009

Category	Years														Total						
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007	2008	2009
Perinatal Conditions	79	70	46	46	44	21	42	52	48	40	42	48	56	43	62	71	65	63	50	53	1041
Congenital Anomalies	28	33	26	23	24	25	19	30	27	27	33	32	39	32	31	28	29	38	30	27	581
SIDS	28	28	21	29	25	18	21	20	19	18	18	18	15	10	3	5	3	9	6	5	319
SUIDS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	15	8	28
Cancer	11	11	6	9	10	6	9	5	10	10	15	5	10	11	10	9	9	15	8	13	192
Infections	8	8	8	3	11	4	7	3	4	6	8	10	6	2	10	5	8	3	5	9	128
Respiratory	7	10	3	10	5	7	9	8	4	1	3	0	2	0	1	1	2	0	3	2	78
Other	19	10	10	14	21	17	15	12	4	11	16	8	2	7	6	2	3	6	6	4	193
Undetermined (Natural)	4	2	0	3	0	0	4	1	1	5	3	0	0	2	0	0	0	0	1	1	27
Total Natural Causes	184	172	120	137	140	98	126	131	117	118	138	121	130	107	123	121	119	139	124	122	2587

* 2009 is the third year where SUIDS (Sudden Unexpected Infant Death Syndrome) deaths were differentiated from SIDS (Sudden Infant Death Syndrome) deaths for the Annual CDRT Report.

Table O
Number of Injury-Related Deaths According to Category
Sacramento County Resident Child Deaths
1990-2009

Category	Years																				
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Year	12	18	13	21	15	20	16	23	11	16	10	16	11	9	15	17	16	12	16	9	296
Homicides	9	7	9	14	8	9	9	14	7	13	6	9	4	1	4	8	7	3	11	6	158
CAN Homicide	3	11	4	7	7	11	7	9	4	3	4	7	7	8	11	9	9	9	5	3	138
Third -Party Homicide	18	15	14	14	15	23	19	17	11	11	14	21	13	14	10	8	11	13	6	5	272
Motor Vehicle Collisions (MVC)	11	11	8	7	8	12	15	10	7	4	8	10	11	8	5	3	6	7	4	1	156
MVC (Driver/ Occupant)	6	3	6	6	5	8	2	7	1	5	5	8	1	5	4	4	3	6	2	2	89
MVC (Pedestrian)	1	1	0	1	2	3	2	0	3	2	1	3	1	1	1	1	2	0	0	2	27
Drowning	8	7	9	7	7	4	4	6	7	6	5	5	9	4	7	5	12	7	4	6	129
Suicide	5	7	3	4	4	3	4	5	8	0	6	5	7	4	4	8	1	4	6	2	90
Suffocation/Choking	3	3	0	4	0	0	2	4	2	1	1	3	1	1	0	2	3	1	1	0	32
Burn/Fire	2	2	1	2	1	0	3	5	4	0	0	1	1	1	0	1	2	5	0	0	31
Other	1	0	0	8	5	3	0	5	1	1	1	8	5	2	6	1	6	1	3	0	57
Undetermined Injury	2	1	9	0	4	4	3	0	2	1	0	1	2	1	1	0	0	0	0	0	31
Poisoning/Overdose	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	2	1	2	7
Total Injury-Related Causes	51	53	49	60	51	57	51	65	46	36	37	60	49	36	43	42	53	45	37	24	945
Undetermined Manner	2	7	2	4	6	0	4	2	2	3	4	8	6	10	10	4	12	8	2	5	101

* Table O above represents the deaths of Sacramento County residents. Not included in this Table are injury-related deaths of out-of-county residents.

Table P
Deaths by Category and Age (n=3,633)
Sacramento County Resident Child Deaths
1990-2009

Category	Infant	1-4	5-9	10-14	15-17	Unknown*	Total
Burn/Fire	2	16	11	1	1	0	31
CAN Homicide	41	78	24	8	7	0	158
Cancer	14	46	48	51	29	4	192
Congenital Anomalies	425	62	27	35	16	16	581
Drowning	6	76	14	13	19	1	129
Infections	69	34	8	5	10	2	128
MVC Bike	0	1	5	13	8	0	27
MVC Occupant/Driver	8	20	11	26	87	4	156
MVC Pedestrian	3	29	15	25	17	0	89
Other -Injury	5	2	3	1	6	40	57
Other -Natural	52	33	36	36	34	2	193
Perinatal Conditions	981	21	8	5	2	24	1,041
Poisoning/Overdose	0	1	0	3	3	0	7
Respiratory	31	17	13	6	8	3	78
SIDS/SUIDS	347	0	0	0	0	0	347
Suffocation	15	10	3	1	3	0	32
Suicide	0	0	0	27	63	0	90
Third Party Homicide	2	6	7	27	96	0	138
Undetermined Injury	10	7	3	5	6	0	31
Undetermined Manner	84	13	2	1	0	1	101
Undetermined Natural	16	3	2	2	4	0	27
Total	2,111	475	240	291	419	97	3,633

*Unknown age data in 97 child deaths from 1990-1995

Table Q
Number of Deaths by Sacramento County Zip Code
Sacramento County Resident Child Deaths
1990-2009

Zip	Neighborhood	All Child Deaths	Third-Party Homicide	Child Abuse & Neglect Homicides
95608	Carmichael	96	3	2
95610	Citrus Heights	88	3	2
95621	Citrus Heights	76	2	6
95624	Sheldon/ Elk Grove	79	5	2
95628	Fair Oaks	71	2	3
95632	Galt/ Twin Cities/ Herald	54	2	0
95655	Mather Air Force Base	6	1	1
95660	North Highlands (Watt & Elkhorn)	152	2	11
95662	Orangevale	62	1	3
95670	Rancho Cordova/ Gold River	128	6	3
95673	Rio Linda/Robla	51	0	3
95690	Locke/ Vorden/ Walnut Grove	6	1	1
95757	Elk Grove	24	1	1
95758	Bruceville/Elk Grove	97	4	2
95814	Downtown Sacramento	37	0	2
95815	North Sacramento (Arden & Del Paso)	147	2	9
95816	Midtown Sacramento	26	0	3
95817	Oak Park/UCDavis Med Center Alhambra & Broadway	70	5	2
95818	S. Land Park & Broadway	41	1	2
95820	Fruitridge (Stockton & 21 St.)	172	13	7
95821	Town & Country Village	96	1	5
95822	Meadowview	154	9	7
95823	Valley High/South Sacramento	298	14	19
95824	Fruitridge (Lemon Hill & Stockton)	145	12	6
95825	Arden/ Arcade	91	3	7
95826	Perkins/ Rosemont	82	3	4
95827	Mills/ Walsh Station	60	1	2
95828	Florin	162	6	7
95829	Coffing	38	2	2
95831	Greenhaven	82	1	3

95832	Freeport	56	4	2
95833	Gardenland	103	2	3
95834	North Sacramento (Truxel and Market near Arco Arena)	27	2	0
95835	North Sacramento (I-5 & HW 99 Junction in N. Sac)	17	1	1
95837	Metro-Airport	3	1	0
95838	Del Paso Heights/ Hagginwood	198	13	7
95841	Foothill Farms	58	3	1
95842	North Highlands (Roseville Road & Elkhorn)	123	4	9
95843	Sacramento/ Antelope	67	2	0
95864	Arden Arcade	28	0	1
	Unknown*	262	0	7
Total		3,633	138	158

*Unknown zip code data in 262 child deaths from 1990-1998.

Appendix

APPENDIX A

Memorandum of Agreement for the Sacramento County Multidisciplinary Child Death Review Team

PURPOSE

The purpose of the Multidisciplinary Child Death Review Team is to:

1. Ensure that all child abuse-related deaths are identified;
2. Enhance the investigation of all child deaths through multi-agency review;
3. Develop a statistical description of all child deaths as an overall indicator of the status of children; and
4. Develop recommendations for the prevention and response to child deaths based on said reviews and statistical information.

MEMBERSHIP

The team will be comprised of representatives from the following agencies:

I Sacramento County

- A.** Sacramento County Coroner
 1. Investigations
 2. Forensic Pathology
- B.** Sacramento County Sheriff's Department
- C.** Sacramento City Police Department
- D.** Sacramento City Fire Department
- E.** Sacramento County Probation Department
- F.** Law Enforcement Chaplaincy of Sacramento
- G.** California Highway Patrol

II Department of Health and Human Services

- A.** Child Protective Services
- B.** Epidemiology and Disease Control/ Maternal, Child and Adolescent Health
- C.** California Children's Services
- D.** Public Health Nursing

III District Attorney's Office

IV Local Hospitals

- A. Kaiser Permanente
- B. Mercy Sacramento/San Juan Catholic Healthcare West
- C. Sutter Health - CHS
- D. University of California, Davis Medical Center
 - 1. CAARE Unit
 - 2. Pathology

V Other Community Service Agencies

- A. Child Abuse Prevention Council of Sacramento

Said agencies will provide routine representation on an on-going basis. No agency shall withdraw from the Team or suspend their participation without the expressed approval of the appropriate regulatory body. Individual representatives will be expected to consistently attend all meetings for a period of no less than one year.

Each participating agency in the Child Death Review Team shall appoint a lead representative (A) and a single alternate (B) to participate in the death investigation review meetings. The lead person (A) shall provide case specific information on child deaths under review. The agency shall designate a single back-up representative (B) to provide case specific information in the event that person (A) cannot be present. No additional staff person from the agency may replace person A or B. If neither person A nor person B can attend a meeting, the agency will not have a representative at that meeting. The Chair may approve a representative other than A or B to provide case specific information for an upcoming meeting. The request shall be made by the agency in advance to the Chair, if there are extenuating circumstances requiring a person other than A or B to present information from that agency.

New Team representatives will receive an orientation organized by the Child Abuse Prevention Council in conjunction with other experienced Team representatives. This orientation will include information regarding the Team purpose, established protocols and procedures, the role of each Team representative and their agency, current membership, meeting schedule, and data collection requirements.

In addition to the standing representatives, other agencies and individuals may be invited to attend meetings when, after initial review, the Team feels that they may have direct information about a case or that they may have particular subject expertise to contribute to the overall review.

All parties who participate in the child death review process will be required to sign and adhere to a confidentially agreement.

STATUTORY AUTHORIZATION

In 1987, Sections 830 and 10850.1 were added to the State Welfare and Institutions Code and provided specific authorization allowing multidisciplinary child abuse teams to receive information related to incidents of child abuse and information which could be relevant to the

prevention, identification or treatment of child abuse. In 1988, Section 18961 of the Welfare and Institutions code was amended to allow qualified persons not serving as standing members of such teams to be deemed a part of the team as necessary, and to receive and disclose information relevant to particular cases as needed.

Also in 1988, Sections 11166.7 and 11166.8 of the State Penal Code authorized the Attorney General and the California Consortium of Child Abuse Providers to develop the protocols necessary for the development and implementation of interagency child death teams for review of suspicious child deaths. Amendments to this legislation in 1992 required that each county establish an interagency child death team and added Section 11166.9, which established the California Child Advisory Board to coordinate and integrate state and local efforts to address fatal abuse and neglect.

In 1999, SB 252 recast several of the provisions of Section 11166.7, including the requirement that local CDRT's participate in the statewide child abuse and neglect monitoring system by meeting minimum standard protocols and submitting information on child abuse and neglect deaths. It also provided training and technical assistance to CDRT's and professionals involved in case reviews. In 2004, Section 11166.7 was amended and renumbered as Section 11174.32.

TARGET POPULATION

The target population for case review is all children up through 17 years of age that die in Sacramento County. The Team will consider cases for children who are not residents of the county if they die within county limits. The Team will also consider cases for children who die in another county but are residents of Sacramento County.

MEETINGS

Regular meetings of the Team will be held monthly on a set date to be determined annually by the Team representatives. The meetings will occur approximately mid-month and will include all cases from the previous month as well as any cases held over for further review or analysis.

GROUND RULES

Members of the CDRT agree to:

Practice timely and regular attendance.

Share all relevant information.

Stay focused and keep all comments on topic.

Listen actively – respect others when they are talking.

Be willing to explore others' basis for conclusions if you do not agree with them. However, question members in a respectful manner and refrain from personal attacks.

Be prepared for case discussion.

Discuss all cases objectively with respect for deceased, their families, and all agencies involved.

Respect all confidentiality requests the group has agreed to honor.

OFFICERS

The officers of the CDRT shall be a Chair and a Vice Chair. Officers will be nominated by CDRT members and approved by consensus of the CDRT.

The duties of the Chair shall be to:

1. Lead the discussion, ensuring all critical case information is shared.
2. Facilitate the meeting, keeping the group in compliance with the established ground rules.
3. Present the annual report to the Board of Supervisors with the President/CEO of the Child Abuse Prevention Council or appoint an alternate presenter.
4. Represent the CDRT at certain functions and events.
5. Approve visitors and emergency alternates on a case-by-case basis.

The duties of the Vice Chair shall be to:

1. Serve as co-facilitator including reinforcing the ground rules as necessary.
2. Provide support to the Chair as necessary.

Nominations will be made by team members at the meeting preceding the ballot. The ballot will be private. The Chair will serve a three-year term. At the conclusion of the three-year term, a person from another discipline shall be elected Chair. A person may serve more than one three-year term but not consecutively. A non-consecutive term will help ensure that the responsibilities of the Chair are rotated among the team's representative disciplines. A Vice-Chair will be appointed at the same time as the Chair. This individual will be eligible, but will not be assured the role of Chair at the end of the three-year term.

PROCEDURES

The representative(s) from the Sacramento County Department of Health and Human Services will acquire death certificates from the Vital Statistics Branch for all children under 18 who have died in the county during the preceding month. These will be collected by the Child Abuse Prevention Council within the first week of the month. Death certificates for children who are Sacramento County residents but who die in other counties will be obtained by the Child Abuse Prevention Council from the child death review teams functioning in the counties where such deaths occur.

The Child Abuse Prevention Council will label the death certificates as to the appropriate agency jurisdiction, whether it is within the county or city limits based upon where in the county the fatal incident has occurred. The certificates will then be copied and mailed, along with a copy of the agency specific data collection forms, to each Team representative in a sealed envelope marked Confidential no later than 2 weeks prior to the next Team meeting. Also included in this mailing will be the agenda for the coming meeting, minutes reflecting general Team process, information for the previous meeting, and any educational or informational items pertinent to the Team.

Each Team representative is then responsible for reviewing his/her internal agency records to determine what information is available on each child and/or family. Relevant information is documented on the data collection forms for those cases where agency information is available. The forms will be completed and brought by the representative to the next meeting. If the

standing Lead representative is not available to attend a meeting, the designated Alternate will bring the data forms to the meeting. In the event that both the Lead and Alternate representatives are not available the data forms will be provided at the next meeting attended by either representative. In addition to data forms, a representative may elect to bring their agency files to the next meeting for reference, but agency files and records are not to be reproduced for central files or distributed to other representatives.

The Team may openly discuss all relevant case data during meetings. No confidential and/or case specific information will be recorded in the minutes. Follow-up cases will be recorded on future agendas by name, date of death, case history, and the CDRT agency responsible for follow-up. Team representatives will destroy all agendas, death certificates and other confidential materials related to case reviews following each meeting. The Child Abuse Prevention Council will complete a Case Summary form for each case reviewed. The Case Summary form will include case information agreed upon by the CDRT. No additional case specific information recorded. Case Summary forms will be kept in a locked file by the Child Abuse Prevention Council. Case Summary information will be entered into a secure database from which aggregate data can be generated.

In the event that a case has yet to progress sufficiently to provide a conclusion at any given meeting, it will be placed on successive agendas until resolved. Meeting agendas will reflect the order in which cases are to be reviewed, with the review of new cases preceding the review of follow-up cases. At any time, a Team representative may request that a particular case be given priority in the order of the reviews. Team representatives may bring up additional cases that have occurred but are not on the agenda and may request that a case be reconsidered at any time.

CHILD ABUSE PREVENTION COUNCIL RESPONSIBILITIES

As sponsor of the Sacramento County Child Death Review Team, the Child Abuse Prevention Council of Sacramento, Inc. (CAPC) is responsible for:

1. The identification and maintenance of resources and staff as needed for the continued implementation of the CDRT including but not limited to:
 - a. Coordination and staffing for all CDRT meetings.
 - b. Administrative and technical support necessary for multi-agency death review: timely collection and distribution of death certificates and agency specific data collection forms; distribution of the agenda, prior meeting minutes reflecting general Team process information, and any educational or informational items pertinent to the Team.
 - c. Collection and maintenance of agency specific data collection forms.
 - d. Management of all confidential CDRT data and case files.
2. Participation in and implementation of the Fatal Child Abuse and Neglect Surveillance (FCANS) Program.
3. Provision of technical and administrative support necessary for the development and distribution of the CDRT Annual Report.

EVALUATION

An annual report will be published each year and presented to the Sacramento County Board of Supervisors. The report will serve as one indicator of the status of children in Sacramento County and will be one base of information for a response to identified problems. The report shall include data describing the causes of death to provide the information necessary for the development of a full range of prevention efforts.

Data described in the annual report will be based upon those elements collected in the Team's data collection forms. In addition to demographics, the report will include available socioeconomic data.

The annual report will also include recommendations made by the Team based on the data collected. In keeping with the goals of the Team, there may be additional reports or systems recommendations, which emerge as a result of case reviews and data analysis. The Team reserves the option to issue separate reports and policy recommendations in addition to the annual report.

INDEMNIFICATION AND INSURANCE

Each party shall defend, indemnify and hold harmless the other, its officers, agents, employees and volunteers from and against all demands, claims, actions, liabilities, losses, damages, and costs, without limitation including payment of reasonable attorneys' fees, expert witness or consultant fees and expenses related to the response to, settlement of, or defense of any claims or liability arising out of, or in any way connected with the respective responsibilities and duties hereby undertaken, except that each party shall bear the proportionate cost of any damage attributable to the fault of that party, its officers, agents, employees and volunteers. It is the intention of the parties that, where fault is determined to have been contributory, principles of comparative fault will be followed.

Each party, at its sole cost and expense, shall carry insurance -or self-insure - its activities in connection with this Agreement, and obtain, keep in force and maintain, insurance or equivalent programs of self-insurance, for general liability, professional liability, workers compensation, and business automobile liability adequate to cover its potential liabilities hereunder.

APPENDIX B**Sacramento County Child Death Review Team****Confidentiality Agreement**

As a member of the Sacramento County Child Death Review Team (CDRT), I understand all cases discussed, information received, and all documents reviewed pertaining to cases presented to the CDRT, are strictly confidential. As an individual and/or a representative of my agency on the CDRT, I further understand and agree to abide by the current Memorandum of Understanding establishing and maintaining the CDRT.

I agree that I will not discuss, disseminate in any manner, nor otherwise cause dissemination of such information, to any non-member unless otherwise provided by law. I further understand, and agree, that my duty to preserve and protect the confidentiality of all information received as a team member, is a continuing and permanent duty, and is not contingent upon my status as a team member, and is not terminated upon conclusion of my membership.

NAME: _____

SIGNATURE: _____

AGENCY/PROFESSIONAL DISCIPLINE REPRESENTED:

DATE: _____

APPENDIX C

Sacramento County Child Death Review Team Members

Formation Members

California State Attorney General's Office

Michael Jett
Senior Field Deputy, Crime Prevention Center

Child Abuse Prevention Council of Sacramento, Inc.

Marie Marsh
Executive Director

Sheila Boxley
Child Death Review Team Coordinator

Juvenile Justice Commission

Alison Kishaba
Commission Chairperson

Sacramento City Police Department

Detective Ernie Barsotti

Sacramento County Coroner's Office

Robert Bowers
Chief Deputy Coroner

Sacramento County Department of Health and Human Services

Marcia Britton, M.D.
Director, Child Health and Disability Prevention

Sacramento County Department of Social Services

Sarah Jenkins

Sacramento County District Attorney's Office

Janice Hayes
Deputy District Attorney

Sacramento County Executive's Office

Margaret Tomczak
Children's Commission

Sacramento County Sheriff's Department

Sergeant Harry Machen

University of California Davis Medical Center

Michael Reinhart, M.D., CDRT Founding Chair
Medical Director, Child Protection Center

APPENDIX D

Sacramento County Child Death Review Team

2011 Members

Child Abuse Prevention Council of Sacramento, Inc.

Stephanie Biegler
Director

Gina Roberson, M.S.
Associate Director

Nazia Ali-Prasad
CDRT Project Manager

Department of Health & Human Services

California Children's Services
Mary Jess Wilson, M.D., M.P.H.
Medical Director

Sacramento County Coroner's Office

Kim Burson
Assistant Coroner/ Investigation

Sutter Memorial Hospital

Angela Rosas, M.D., CDRT Chair
Pediatrician

Department of Health and Human Services

Child Protective Services
Marian Kubiak, M.S.W., CDRT Vice-Chair
Julie Zawodny

California Highway Patrol

Elizabeth Dutton

Citrus Heights Police Department

Lee Herrington, Detective

Department of Health and Human Services

Epidemiology and Disease Control
Cassius Lockett, PhD, Epidemiologist

District Attorney's Office

Anne Marie Schubert, J.D.
Supervising Deputy District Attorney
of Special Assault and Child Abuse Unit

Elk Grove Police Department

Joe Blair, Sergeant

Kaiser Permanente

Carole Jones, R.N., C.C.R.N.
Andrew Kincaid, M.D., Pediatric Specialty Clinic

Law Enforcement Chaplaincy - Sacramento

Frank Russell
Supervising Senior Chaplain

Mercy San Juan Hospital/CHW

Judi Marschel, B.S.N, R.N.C.-N.I.C.
Wendy Edwards, R.N

Sacramento City Fire Department

Keith Gault, Captain
Trent Waechter

Sacramento City Police Department

Paul Martinson, Sergeant

Sacramento County Metropolitan Fire Department

Clayton Elledge, Captain

Sacramento County Probation Department

Keith Bays

Sacramento County Sheriff's Department

Jeff Reinl, Sergeant
Brian Shortz, Detective

University of California Davis Medical Center

Kevin Coulter, M.D.

Sacramento County Child Death Review Team

Past Members

Amelia Baker, P.H.N.
Public Health and Promotion/Del Paso Center
Department of Health and Human Services

Sandra Baker
Executive Director
Child and Family Institute

Walt Baer
Detective, Child Abuse Bureau
Sacramento County Sheriff's Department

Michael Balash
Captain
Sacramento Fire Department

Will Bayles
Sacramento County Sheriff's Department

Ken Bernard
Sacramento City Police Department

Chinayera Black
CDRT Coordinator
Child Abuse Prevention Council of Sacramento, Inc.

Bill Brown, M.D.
Chief Coroner
Sacramento County Coroner's Office

Sue Boucher
CDRT Coordinator
Child Abuse Prevention Council of Sacramento, Inc.

Cathy Boyle R.N., P.N.P.
Pediatric Nurse Practitioner
Child Protection Center

Sarah Campbell, M.D.
Northern California Forensic Pathologists
Sacramento County Coroner's Office

Blessilda Canlas
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Detective, Sacramento City Police Department

Rod Chong
Division Chief, Sacramento City Fire Department

Judy Cooperider, M.S.W.
Department of Health and Human Services
Child Protective Services

Linda Copeland, M.D.
Foundation Health Medical Group, Inc.

Sherri Cornell, R.N.
California Children's Services

Laura Coulthard
Bureau Chief, Emergency Response
Department of Health and Human Services

Jacque Cramer, P.H.N.
Director of Field Nursing
Department of Health and Human Services

Margaret Crockett, R.N., CNS
Neonatal Nurse Specialist
Sutter Memorial Hospital

Mark Curry
Deputy District Attorney, Homicide
District Attorney's Office

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Director Patient Support Services
University of California, Davis Medical Center

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Department of Health and Human Services

Joe Dean
Sergeant, Homicide Unit
Sacramento County Sheriff's Department

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Department of Health and Human Services

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Chief Pediatrician
Mercy Healthcare/UC Davis Medical Center

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Phil Ehlert
Sacramento County Coroner's Office

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Norma Ellis, P.H.N.
Field Services Nurse
Department of Health and Human Services

Fernando Enriquez, Sergeant
Sacramento City Police Department

Earl Evans
Sacramento County Sheriff's Department

Mark Fajardo, M.D.

Stephanie Fiore, M.D.
Forensic Pathologist
Sacramento County Coroner's Office

David Ford
Sergeant, SACA Unit
Sacramento City Police Department

Mary Ann Harrison
Department of Social Services

Rich Gardella
Sergeant, Homicide Unit
Sacramento City Police Department

Guy Gates, Detective
Citrus Heights Police Department

Keith Gault
ACLS Coordinator
Sacramento City Fire Department

Jason Gay
Detective
Sacramento County Sheriff's Department

Lori Greene, J.D., Deputy District Attorney
District Attorney's Office

Kevin Givens, Detective
Sacramento County Sheriff's Department

James Jay Glass
Paramedic Captain
Sacramento City Fire Department

Mario Guzman
Sergeant
Elk Grove Police Department

Ethel Hawthorn
Supervisor, Child Protection/Family Preservation
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Max Hartley
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Department of Health and Human Services

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Kaiser Permanente Foundation

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Chaplain
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Tim Maybee
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Debbie Mart
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Sacramento City Fire Department

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University of California Davis Medical Center

Bud Meyers
Child Protective Services
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Richard Miles
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John Miller
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Mindi Russell
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Howard Sihner
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Sue Simmons, R.N., M.P.V.
Field Nurse
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Andrew Smith, J.D.,
Supervising Deputy District Attorney
of Sexual Assault Child Abuse Unit
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Dr. John Stockman
Stockman and Associates

Grant Stomsvick
Detective
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Ben Sun, D.V.M., M.P.V.M.
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Mark Super, M.D., CDRT Vice-Chair,
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Jane Tabor-Bane
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California Children's Services

Debbie Yip
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APPENDIX F

GLOSSARY

Abuse Homicide: (A subset of the CAN homicides) Child abuse was the direct cause, or was in the direct chain of causes of the child's death. All deaths caused intentionally or unintentionally by abuse where the perpetrator was a parent or a caregiver fall under this category. Examples:

- A baby who dies from shaken baby syndrome
- A murder/suicide, where a parent kills his/her child and then him or herself

Abuse-Related Death: Child abuse was present and contributed in a concrete way to the child's death. Child death secondary to documented abuse (e.g., suspicious behavior with evidence of prior abuse).

Burn/Fire: Death caused by fire through a rapid combustion or consumption in such a way as to cause detrimental harm to one's health.

Cancers: A tumor disease, the natural course of which is fatal. Cancer cells, unlike benign tumor cells, exhibit the properties of invasion and metastasis and are highly anaplastic.

Cause of Death: Causes of death are coded according to the Tenth Revision of the International Classification of Diseases (ICD - 10). Natural cause and injury (E-Codes) classifications are used.

Child Abuse: According to the Centers for Disease Control and Prevention (CDC), child abuse involves acts of commission that are deliberate and intentional; however harm to a child may or may not be the intended consequence. The following types of maltreatment involve acts of commission; physical abuse, sexual abuse and/or psychological abuse.

Child Abuse and Neglect (CAN) Homicide: A homicide where the perpetrator was the primary caregiver. A death in which a child is killed, either directly, or indirectly, by their caregiver.

Child Death: A death occurring in a child birth through 17 years of age.

Child Death Review Team (CDRT): An interagency team that investigates child abuse and neglect deaths of children birth through 17 years of age. The ability to establish confidential Child Death Review Teams was provided in 1988 by revisions to the State Penal Code (Section 11166.7) and the State Welfare and Institution Codes (Sections 830 and 10850.1).

Child Maltreatment: Any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child (abuse, abuse-related, neglect, neglect-related, questionable abuse/neglect, prenatal substance abuse).

Child Neglect: According to the Centers for Disease Control and Prevention (CDC), child neglect includes the failure to provide for a child's basic physical, emotional, or education needs or to protect a child from harm or potential harm. The following types of maltreatment involve acts of omission; physical neglect, emotional neglect, medical/dental neglect, and/or failure to supervise (inadequate supervision and/or exposure to violent environments). Example:

- A child who was severely malnourished and was not gaining weight while in the care of his or her parents

Child Protective Services (CPS): An agency within the Sacramento County's Department of Health and Human Services. CPS investigates child abuse and neglect and provides services to keep children safe while strengthening families. CPS also trains foster parents, acts as an adoption agency, and licenses family daycare homes.

Congenital Anomalies: Abnormal intrauterine development of an organ or structure; commonly referred to as "birth defects". Congenital - A condition that exists at birth, and usually before birth, regardless of its causation. Anomalies - Marked deviations from the normal standard, especially as a result of congenital defects. These conditions are acquired during the development of the fetus and are generally attributed to heredity/genetics.

Death Certificate: Certifies the occurrence of a death and provides the basis for the identification of cases to be reviewed by the CDRT.

Death Rate: The number of deaths within a population divided by the total number of members in that population. Death rates are used to make comparisons between groups of varying size and composition. In this document, since we are working with small numbers, the death rates were multiplied by 100,000 so that subtle deviations could be more easily detected.

Drowning: A death resulting under water or other liquid of suffocation.

Domestic Abuse: Also called domestic violence, domestic abuse is violence against a spouse, cohabitant, fiancée, or other person with whom the abuser has a dating relationship, or someone formerly in any of these relationships. Types of violence includes: sexual assault; placing a person in reasonable apprehension of being seriously injured (threats); intentionally or recklessly causing or attempting physical injury.

Epidemiology: The study of distribution and determinants of disease, disability, injury, and death.

Emotional Abuse: When a person causes or permits a child to suffer unjustifiable or significant mental suffering.

Family Criminal History: The violent or non-violent criminal history for the decedent and/or parent(s)/guardian(s). *See violent or non-violent criminal history for definitions.*

Fetal Alcohol Syndrome (FAS): A group of birth defects seen among babies whose mothers consumed alcohol during pregnancy, which includes mental retardation, developmental disabilities, and physical deformities.

Fetal Death: A death occurring in a fetus over 20 weeks gestational age; not a live birth.

Failure To Thrive: The abnormal retardation of growth and development of an infant resulting from conditions that interfere with normal metabolism, appetite, and activity. Causes include illness, chromosomal abnormalities, major organ system defects, and malnutrition.

Infant Death: A death occurring during the first year (12 months) of life; includes both neonates and post neonates.

Infant Mortality Rate: The number of infants who die within the first year of birth per 1,000 live births.

Infection: The invasion and multiplication of microorganisms in body tissues. Examples are meningitis and sepsis.

Injury-Related Death: A death that is a direct result of an injury-related incident. Examples include homicides, Motor Vehicle Collisions (MVC), suicides, drownings, burn/fires and suffocations.

Intentional Injury: An injury that is purposely inflicted, by either oneself or another person.

International Classification of Diseases: A guide for the classification of morbidity and mortality information for statistical purposes published by the World Health Organization.

Low Birth Weight: Birth weight below 2500 grams.

Manner of Death: Cause of death as indicated on the death certificate, which includes the following five categories: Natural; Accident; Suicide; Homicide; and Undetermined.

Mandated Reporter: A person, who (1) in their professional capacity or within the scope of their employment, has a special relationship or contact with children and (2) is legally required to report known or has "Reasonable Suspicion" (see definition) of child abuse and neglect, obtained in the scope of their employment.

Mechanism of Death: The means by which the death of a child occurred or is accomplished.

Methamphetamine: A synthetic drug, which affects the central nervous system. Street methamphetamine is sometimes called "speed," "meth," "crank," "chalk," and "zip".

Medically Fragile: A term used to describe children at risk for abnormal growth and development and/or serious medical problems.

Motor Vehicle Collision (MVC): A traffic collision (motor vehicle collision, motor vehicle accident, car accident, or car crash) is when a road vehicle collides with another vehicle, pedestrian, animal, road debris, or other geographical or architectural obstacle.

Natural Deaths (Causes): Death due to complication(s) of disease process, or due immediately to natural cause(s). Examples of deaths categorized from natural causes include perinatal conditions, congenital anomalies, cancers, Sudden Infant Death Syndrome (SIDS), Sudden Unexpected Death Syndrome (SUDDS) and deaths due to infections or respiratory conditions.

Neglect Homicide: (A subset of the CAN homicides) Neglect was the direct cause, or was in the direct chain of causes, of the child's death. Deaths caused by the negligent failure of a parent/guardian or caregiver to provide adequate food, clothing, shelter, or medical care. Deaths clearly due to neglect, supported by a Coroner's reports or police or criminal investigation. Examples:

- An abandoned newborn that dies of exposure.
- A child who dies from an untreated life threatening infection.
- A parent or caregiver driving recklessly with a suspended license when involved in a motor vehicle collision.

Neglect-Related Deaths:

Supervision and Situational Neglect: Deaths that involve critical moments in which the child, left without adequate supervision, food, shelter, or medical care is killed by a suddenly arising danger. Deaths where poor caregiver skills and/or judgment endangered the life of a child are also included in this category. Death secondary to documented neglect or any case of poor caretaker skills or judgment. Examples:

- An unattended infant who drowns in a bathtub.
- Unrestrained child killed in a motor vehicle accident.
- Motor Vehicle Collisions (MVC's) or house fires where caretaker was "under the influence."

Prenatal Substance Abuse: Prenatal substance abuse where there is a clear medical link to infant death or death is secondary or known to probable prenatal substance abuse. Examples:

- Maternal methamphetamine use that causes a premature birth and subsequent death.
- An infant exposed prenatal to cocaine and alcohol that dies from multiple birth defects.

Neonatal Death: A death occurring during the first 27 days of life.

Non-violent Criminal History: Non-violent crime does not use physical force and cause physical pain. Non-violent crime includes, but is not limited to, prostitution, drug sales/trafficking, DUI, burglary, theft, etc. It does not include minor traffic arrests/tickets.

Pathology: The study of disease, its essential nature, cause, and development; and the structural and functional changes it produces.

Perinatal: The period shortly before through shortly after birth, variously defined as beginning with the completion of the twentieth to twenty-eighth week of gestation and ending 7 to 28 days after birth.

Perinatal Conditions: Conditions that include prematurity, low birth weight, placental abruption and congenital infections. Deaths due to perinatal conditions span the time period from the second trimester of pregnancy through one month after birth.

Poisoning/Overdose: Death caused by a substance with an inherent property that tends to destroy life or impair health with the possibility of death.

Physical Abuse: (California Law – PC 11165.6) Any physical injury inflicted on a child by other than accidental means. Any physical injury that is unexplainable by the child's medical history. Physical abuse also includes discipline or control by any means not authorized by law to manage persons who are mentally challenged or impaired.

Physical Neglect: (PC 11165.2) – Negligent or maltreatment of a child by a caregiver – including both acts and omission of care.

Postneonatal Death: A death occurring between age 28 days up to, but not including, age one year.

Postmortem: An examination of the body after death, usually with such dissection as will expose the vital organs for determining the cause of death or the character and extent of changes produced by disease; an autopsy.

Prevention Advisory Committee (PAC): An advisory committee to the CDRT consisting of public and private agency service providers that meet to review aggregate data and draft major findings and recommendations for CDRT consideration, pertaining to the annual CDRT report.

Prenatal: The period beginning with conception and ending at birth.

Prenatal Substance Abuse Deaths: Clearly due to prenatal substance abuse supported by Coroner's reports (e.g., cocaine, intoxication, death from medical complications due to drugs).

Prenatal Substance Abuse-Related Deaths: Deaths secondary to known or probable substance abuse (e.g., SIDS/SUIDS with known perinatal exposure to drugs).

Prematurity: Birth prior to 37 weeks gestation.

Preterm Labor: Onset of labor before 37 weeks gestation.

Positive Toxicology Profile: For the purpose of this report, a positive toxicology profile refers to a child born with drugs in his or her system at birth.

Public Health Nursing (PHN): A part of the County Department of Health and Human Services. PHN provides a broad array of services to families with small children, from working with pregnant women to helping families with high-risk infants, to providing grief counseling.

Questionable Abuse/Neglect Deaths: There are no specific findings of abuse or neglect, but there are factors such as substance abuse use or abuse where substance exposure caused caretaker to experience mental impairment; previously unaccounted for deaths in the same family; or prior abuse/neglect of a child or protective service referral.

Respiratory: Pertaining to or serving for respiration: *respiratory disease*.

Reasonable Suspicion: (PC 11166[a]) When it is objectively reasonable for a person to entertain such a suspicion, when based upon the facts that could cause a reasonable person in a like position, drawing when appropriate on his or her training and experience, to suspect child abuse.

Risk factors: "Risk Factors" is the broad term used to describe a variety of social, economic, and/or demographic circumstances or other elements that may be associated with a higher risk of negative health outcomes for children. These risk factors include, but are not limited to, substance abuse, prior child abuse and neglect, family or other violence, poverty, and mental illness.

Sexual Abuse and Exploitation: (PC 11165.1) Sexual assault on or sexual exploitation of a minor. Specifically, sexual abuse includes: rape, gang rape (or rape in concert), incest, sodomy, oral copulation, and lewd and lascivious acts.

Sudden Infant Death Syndrome (SIDS): The sudden death of an infant under one year of age, which remains unexplained following an investigation of the case, including the performance of a complete autopsy and review of the clinical history. Section 27491.41 of the California Government Code defines SIDS as "the sudden death of any infant that is unexpected by the history of the infant and where a thorough postmortem examination fails to demonstrate an adequate cause of death."

Sudden Unexpected Infant Death Syndrome (SUIDS): The sudden unexpected/unexplained infant death (SUID) applies to the death of an infant less than one year of age, in which investigation, autopsy, medical history review, and appropriate laboratory testing fails to identify a specific cause of death. SUIDS includes cases that meet the definition of Sudden Infant Death Syndrome (SIDS). If there are external or exogenous stressors [risk factors] that a medical examiner would like to incorporate on a death certificate, such as co-sleeping or bed sharing, they may be added to the cause of death, such as in the following way: *Sudden unexplained (or unexpected) infant death while bed-sharing.*

Suicide: The intentional taking of one's own life.

Suffocation/Choking: A death caused by the prevention of access of air to the blood through the lungs or analogous organs; to impede respiration.

Syndrome: A set of signs or symptoms that occur together often enough to constitute a specific condition or entity.

Third-Party Homicide: A homicide where the perpetrator was not the primary caregiver. A third-party homicide is the killing of a human being by another human being with or without malice aforethought. This can include crimes such as driving under the influence of alcohol causing a fatal accident resulting in a death of a child.

Toxicology Screening: For the purpose of this report, toxicology screening refers to blood analysis used to detect prenatal drug exposure.

Undetermined Manner: Death in which the manner or how the death occurred is unknown and the cause of death may or may not be medically identifiable.

Undetermined Natural: Natural death in which the cause of death may not be medically identifiable

Unintentional Injury: An injury that was unplanned, and unintended to happen, such as motor vehicle crashes, fires and drownings.

Violent Criminal History: Violent crime is a crime in which the offender uses or threatens to use violent force upon the victim. This entails both crimes in which the violent act is the objective, such as a murder, as well as crimes which violence is the means to an end. Violent crimes include crimes committed with and without weapons. Violent crime includes, but is not limited to, robbery, assault, and homicide.

Youth Death Review Subcommittee (YDRS): A subcommittee of the CDRT that investigates Sacramento County resident youth deaths from 10 through 17 years of age.