NCAC

CALiO™

CHILD ABUSE LIBRARY ONLINE

Child Fatalities

A Bibliography

September 2025

Championing and Strengthening the Global Response to Child Abuse

nationalcac.org | 256-533-KIDS(5437) | 210 Pratt Avenue NE, Huntsville, AL 35801

Preferred citation: National Children's Advocacy Center. (2025). Child Fatalities: A Bibliography. Huntsville, AL: Author.

This project was supported by a grant awarded by the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Scope

This bibliography lists publications exploring various issues related to child fatalities due to maltreatment. Risk, prevention, reporting, and characteristics are among the topics covered.

Organization

Publications include articles, book chapters, reports, and research briefs and are arranged in date descending order. Links are provided to full text publications when possible. However, this collection may not be complete. More information can be obtained in the Child Abuse Library Online.

Disclaimer

This bibliography was prepared by the Digital Information Librarians of the National Children's Advocacy Center (NCAC) for the purpose of research and education, and for the convenience of our readers. The NCAC is not responsible for the availability or content of cited resources. The NCAC does not endorse, warrant or guarantee the information, products, or services described or offered by the authors or organizations whose publications are cited in this bibliography. The NCAC does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed in documents cited here. Points of view presented in cited resources are those of the authors, and do not necessarily coincide with those of the NCAC.

Child Fatalities

A Bibliography

Gibbs, D. J., Lanier, P., McNellan, C., & Bryant, K. (2025). Identifying children at risk for maltreatment fatalities: Assessing the current landscape of birth match policies in the United States. *Journal of Public Child Welfare*, *19*(2), 320–348. DOI:10.1080/15548732.2024.2319732

Data-driven decision-making is a common approach for identifying child maltreatment. However, such strategies must be guided by ethical, equitable, and evaluative frameworks due to their potential for bias and error. This study analyzes the key features, potential challenges, and research evidence of a data-driven strategy known as birth match. Interviews with key informants across four states indicate that programs share features and objectives but that they differ regarding match criteria, data integrity processes, and responses to identified cases. Further, little outcome and equity evidence exists. Results emphasize the need for additional implementation and evaluation infrastructure to ensure transparency and effectiveness.

Neumann, K., Veazie, S., Mason, S. M., Ahern, J., & Riddell, C. A. (2025). US state minimum wages and rates of maltreatment-related death among children. *Child Abuse & Neglect*, *160*, 107227. DOI:10.1016/j.chiabu.2024.107227

The number of U.S. deaths due to child maltreatment (abuse and neglect) has been increasing over several years. Policy-level interventions that increase household income may be effective interventions for lowering child maltreatment death rates. To estimate the effect of state-level minimum wages on child maltreatment-related mortality and assess heterogeneity by race and ethnicity, 24,025 child maltreatment-related deaths in U.S. children under 5 years old between 2000 and 2019 were identified via death certificates using International Classification of Diseases codes that (1) identified abuse explicitly and (2) identified injuries predictive of maltreatment ("proxy codes"). State-year maltreatment-related deaths were divided by under-5 population estimates to obtain

death rates. Incidence rate differences (IRD) of the effect of a $1 increase in effective minimum wage on child maltreatment-related death rates, were estimated via a linear regression with state and year fixed effects, robust standard errors, population weights, and appropriate confounder adjustment. Heterogeneity in effect by race and ethnicity was examined using stratified models. Fully adjusted estimates using combined explicit and proxy codes were close to the null [IRD: -0.05 deaths per 100,000 children overall, 95%CI: (-0.25, 0.16)], with slight, if imprecise, protective estimates among non-Hispanic Black children [IRD: -0.60 deaths per 100,000 children, 95%CI: (-1.28, 0.08)]. This study did not find compelling evidence of a link between minimum wages and child maltreatment-related mortality. Future research should explore other potential policy levers as potential child maltreatment interventions.

Palusci, V. J., & Bishop, P. L. (2025). What have we learned about child maltreatment fatality prevention?. *APSAC Advisor*, *38*(1), 13-35.

The number of identified fatal child abuse cases in the U.S. has been steadily increasing, with neglect causing or contributing to most of these deaths. Focusing on articles since 2015, we searched PubMed, PsycInfo, CINAHL, Embase, Web of Science, and Scopus on the terms “child abuse,” “child neglect,” “child maltreatment,” “fatality” and “prevention” to find themes on what we have learned about risk factors, strategies, and the role of public policy for child maltreatment fatality prevention. Compared to child maltreatment in general, young child age, male gender, non-White race, special needs and disability, and behavioral issues are additional indicators more strongly associated with fatality. Most perpetrators are caregivers of their victims, and official statistics show that women are more often the perpetrators of infant abuse and neglect-related deaths. Parental mental illness, substance use, access to firearms, prior intimate partner violence, other violence in the home, and criminal history increase risk. Any parent or caretaker of any socioeconomic background may be capable of harming or killing a child; however, economic hardship often leads to parental stress, frustration, and an inability to provide

basic needs. Policies addressing socioeconomic factors, poverty, housing instability, and access to healthcare can reduce the likelihood of child maltreatment and fatalities. Child death review, abusive head trauma prevention, home visiting and economic supports stand out as evidence-based strategies, while health based interventions and changes in the child welfare investigation and prosecution systems show promise as tertiary preventive efforts.

Richmond, N., Ornstein, A., Tonmyr, L., Dzakpasu, S., Nelson, C., & Pollock, N. J. (2025). Child maltreatment mortality in Canada: An analysis of coroner and medical examiner data. *Child Abuse & Neglect*, *159*, 107127. DOI:10.1016/j.chiabu.2024.107127

Fatalities are the most severe consequence of child maltreatment, but there are gaps in what is known about the epidemiology of such deaths in Canada. The objectives of this study were to: (1) identify child maltreatment deaths among those classified as homicide or undetermined manner; (2) estimate rates of child maltreatment mortality by sex, age, geography, and year; and (3) measure differences between rates of child maltreatment mortality and homicide mortality. We used a cross-sectional design and analyzed mortality data from the Canadian Coroner and Medical Examiner Database for a ten-year period (2007 to 2016). To identify child maltreatment deaths, we reviewed narrative data about children aged 0 to 17 years old whose deaths were classified as homicide or undetermined. Descriptive statistics, mortality rates, and incidence rate ratios were calculated. Among the 1758 child deaths due to homicide or an undetermined manner, maltreatment was the probable cause in 20.4 % (n = 359) of deaths; most child maltreatment deaths (72.1 %, n = 259) were among children younger than 5 years old. The national child maltreatment mortality rate was 0.55 deaths per 100,000; the rate was highest among infants (3.43 per 100,000) and decreased at older ages. This study provides evidence about the epidemiology of child maltreatment mortality in Canada.

Wilson, R. F., Yue, X., Thomas, K. E., Kota, K. K., & Betz, C. J. (2025). Racial and ethnic differences in fatal child abuse and neglect and the intersection of community poverty: US, 2003 to 2022. *Child Protection and Practice*, *4*, 100108. DOI:10.1016/j.chipro.2025.100108

In the U.S., child abuse and neglect (CAN) is a significant public health problem. Poverty is a well-known correlate of CAN. In order to examine racial and ethnic differences in fatal CAN among U.S. children and the intersection of community poverty, this study integrated National Violent Death Reporting System (NVDRS) data, county poverty data, and population estimates data. We used NVDRS data to examine fatal CAN for children aged 0–17 years for 2003–2022. Fatal CAN was defined as a homicide precipitated by abuse or neglect by a parent or caregiver. Racial and ethnic differences in fatal CAN were examined using pairwise comparisons. Community poverty quartiles for fatal CAN cases were determined using county-level poverty data and population estimate data for 2003–2022. During 2003–2022, NVDRS captured 6182 fatal CAN cases; 57.3% were boys; 79.6% were aged 0–5 years. An argument (21.4%), child's history of abuse (20.1%), and intimate partner violence (IPV; 15.6%) were the three most common precipitators of fatal CAN. IPV as a precipitator was most common among Asian or Pacific Islander (API; 33.0%), Hispanic (16.4%), and White (19.1%) victims than Black victims (10.8%; $p < 0.05$). More than one in ten (13.9%) fatal CAN deaths co-occurred with the perpetrator's suicide; this occurred most commonly among API victims (38.1%; $p < 0.05$) than Black (5.8%), multiracial (13.4%), and White (13.9%) victims. A larger proportion of fatal CAN among API victims (14.2%; $p < 0.05$) was precipitated by a crisis than did fatal CAN of Black (3.3%), multiracial (4.7%), and White (4.5%) victims. During 2003–2022, more than one in three (35.9%) fatal CAN victims resided in communities classified as the most impoverished; 52.7% of AI/AN victims resided in these communities, followed by Black (46.7%), Hispanic (31.3%), multiracial (30.9%), White (28.7%), and API (12.4%) victims. During this same period, 47.8% of API fatal CAN victims resided in communities with the least poverty, followed by White (17.3%), Hispanic (15.3%), multiracial (16.6%), and Black (10.1%) victims. Fatal CAN is

preventable. Employing multiple strategies, at various levels (e.g., individual, familial, community), might aid in preventing nonfatal and fatal CAN.

Dean, J. R., Kaczor, K., Lorenz, D., Mason, M., & Simonton, K. (2024). Characteristics of child abuse fatalities: Insights from a statewide violent death reporting system. *Child Abuse & Neglect*, *149*, 106649. DOI:10.1016/j.chiabu.2024.106649

Child maltreatment fatalities are a significant public health issue. Case level characteristics of abuse-related deaths can increase our understanding of maltreatment fatalities and inform region-specific prevention initiatives. A mixed methods study was conducted using Illinois Violent Death Reporting System (IVDRS) data from 2015 to 2018. All fatalities with a homicide or undetermined manner of death among decedents 10 years old or younger were included. Both discrete and narrative data were analyzed separately for victim, suspect, circumstance, and household characteristics. Of the 106 deaths that met inclusion criteria, 74 % of homicide deaths (64/86) and 50 % of undetermined deaths (10/20) were due to abuse. Psychosocial characteristics most often identified in abusive deaths included family relationship problems, mental illness, and history of substance abuse. Other common characteristics included use of personal weapons or blunt instruments and death due to punishment. Including narrative data rather than discrete data alone identified 148 % more deaths with three characteristics commonly found in abusive deaths: history of abuse, shaken baby syndrome, and family history of violence. This study demonstrates the capability of multi-source state-level data to enrich our understanding of child abuse fatalities. Employing the narrative review method in other states using the National Violent Death Reporting System may increase the identification of abuse fatalities. Improved recognition and characterization of abuse fatalities has the potential to help address systemic factors involved and enhance targeted prevention efforts.

Mantell, D. M., Chong, N., Takeno, T., Pazdur, M., & Walker, T. (2024). Child fatality individual case reports: A 24-year national state-by-state review. *Child Abuse Review*, *33*(1), e2855. DOI:10.1002/car.2855

This study focused on the content of 1186 Child Fatality Review Board individual case reports collected nationally over a 24-year period (1995–2019). This information, in contrast to group data, may yield important insights into the causative factors, especially for child fatality resulting from neglect and inflicted injury. The reports were collected from six of the 50 states and evaluated for the quality and amount of information. They were also surveyed for data identifying causative factors for neglect and inflicted injury. Only 25 (2 per cent) of 1186 reports that are publicly available contained sufficient information about the four major causative factors—cause of death, prior child protection agency involvement by the family, evidence of professional negligence or error and family history of at-risk circumstances. The 25 cases were then reviewed and coded for presence of information about these factors. The findings demonstrate the need for federal intervention to provide specific guidelines for the states to track their cases, to use a common nomenclature, to investigate common causative factors and to practice common reporting procedures. In this way, a robust national database can be developed.

Palusci, V. J. (2024). Comparing types of child fatality review in the US. *Child Protection and Practice*, *2*, 100040. DOI:10.1016/j.chipro.2024.100040

Child fatality review programs consist of multidisciplinary teams of professionals, agencies and community members with an interest in caring for and protecting children. While the purpose of all child fatality reviews is to conduct a comprehensive, multidisciplinary review of child fatalities to better understand how and why children die, there are distinct types of reviews in the United States that each use findings to take action to prevent other fatalities and improve the health and safety of children in different ways. Each brings a unique perspective, incorporating different stakeholders and

methodologies and playing different roles in identifying patterns, gaps in services, and potential areas for improvement within the broader context of child health and safety. Three major types of review now consistently used across the U.S. include Child Death Review, Fetal Infant Mortality Review, and Citizen Review Panels. These differ in their history of development, statutory authority, financial support, nature of cases reviewed, processes, and reporting to stakeholders. This article is an introduction to the major different types of community-based death review to help practitioners understand and participate more productively in these processes to prevent further fatalities.

Parrish, J. W., Bradley, M., Gallegos, R., Coopes, B., & Covington, T. (2024). Child fatalities resulting from caregiver behavior: A public health approach to child maltreatment classification. *Child Maltreatment*, *0*(0). DOI:10.1177/10775595241300983

Limited research describes approaches for applying a public health lens to fatal child maltreatment classification. Specialized terminology and tools could help improve consistency in classifying deaths resulting from caregiver behavior. A six-criterion classification tool was developed via expert panel review of over 100 child deaths by the Alaska Division of Public Health's Child Death Review (CDR) program. Next, accuracy and acceptability were assessed by inviting staff from other CDRs using a national listserv to classify 21 brief case scenarios with the tool. Among the 47 respondents, sensitivity was 0.87, specificity 0.77, and accuracy 0.84. Variability by tool criterion ranged from 97% to 74% accurate. Most respondents (66%) reported the tool as being helpful for classifying deaths and moderate reliability was found. Study participants found it difficult to consistently apply specific criteria which resulted in a modification of the tool to improve the potential for universal adoption.

Warren, M. D., Pilkey, D., Joshi, D. S., & Collier, A. (2024). Fetal, infant, and child death review: A public health approach to reducing mortality and morbidity. *Pediatrics*, *154*(Supplement 3), e2024067043B. DOI:10.1542/peds.2024-067043B

Fetal, infant, and child death reviews are a longstanding public health effort to understand the circumstances of individual deaths and use individual and aggregate findings to prevent future fatalities and improve overall child health. Child death review (CDR) began in the United States in the late 1970s to better identify children who died of abuse or neglect; fetal and infant mortality review (FIMR) began in the mid-1980s as a response to the stagnant rates of infant mortality. Today, there are >1350 CDR teams and >150 FIMR teams across the United States, including in tribal communities, territories, and freely associated states. Since the 1990s, the Health Resources and Services Administration's Maternal and Child Health Bureau has supported fetal, infant, and child death review work through funding and thought leadership. The Health Resources and Services Administration-funded National Center for Fatality Review and Prevention provides support to CDR and FIMR teams, including a standardized data collection system for use by state and local CDR and FIMR teams. Although distinct processes, CDR and FIMR both use a public health approach to identify system gaps contributing to early death and make recommendations that impact programmatic and policy changes at the local, state, and national levels. Although progress has been made in standardizing data collection and deepening our understanding of fetal, infant, and child deaths, opportunities persist for preventing future deaths.

Barrett, N. M., Michaels, N. L., Kistamgari, S., Smith, G. A., & Brink, F. W. (2023). Child maltreatment among victims of violent death: An analysis of national violent death reporting system data, 2014–2018. *Injury epidemiology*, *10*(1), 63. DOI:10.1186/s40621-023-00474-1

Limited information is known about the impact of childhood maltreatment on lifetime risk of violent death. This study aimed to compare manner of death, demographics, age at time of death, and the presence of a mental health or substance use disorder among

decedents of violent deaths with a history of child maltreatment to those without. This cross-sectional study compared characteristics of pediatric and adult violent deaths with and without a history of child maltreatment that were captured in the National Violent Death Reporting System from 2014 through 2018. Decedents who were male, multiracial, and had adulthood substance or mental health disorders were more likely to have a history of maltreatment. All-age decedents with a history of maltreatment were more likely to die by homicide. Adult decedents with a history of maltreatment were more likely to die by suicide. Maltreated decedents died significantly younger than non-maltreated decedents. Among victims of violent deaths, an identified history of child maltreatment was associated with increased risk of homicide across the lifespan, adult suicide, and earlier death. A history of child maltreatment was also associated with mental health and substance use disorders, which may reflect one of the pathways through which the child maltreatment-to-death association functions.

Jonson-Reid, M., Cheng, S. Y., Shires, M. K., & Drake, B. (2023). Child fatality in families with prior CPS history: Do those with and without intimate partner violence differ?. *Journal of Family Violence*, *38*(4), 687-702. DOI:10.1007/s10896-022-00383-9

Research indicates many children who experience maltreatment are also exposed to intimate partner violence (IPV). Some studies find that children with child protective services (CPS) history have higher risk of preventable child fatality (CF). It is not known if there are unique characteristics of families with combined CPS and IPV histories that could inform service plans to reduce risk of later CF. Information from documents published in the *Innocents Lost Database* was extracted and analyzed, and linked to county level census data. The sample includes CFs from 501 Florida families that occurred from 2008 to 2015. Families had a history of CPS contact, but cause of death varied. Bivariate (t-test, chi-square, correlation) and logistic regression analyses compared CF cases with and without IPV mentioned in the full sample (n = 501) and the reduced sample (n = 155 with in-depth documentation). Prevalence of IPV ranged from 34 to 46% (full and

reduced sample respectively) with violent death more common for this group. CFs with noted IPV histories were more likely to involve school-aged children from larger families. Such cases were more likely to include primary caregivers with noted mental health and substance abuse concerns, and/or prior criminal justice system contact and secondary caregivers with criminal justice histories. IPV was common among preventable CFs with prior CPS histories. Caregivers in these families had substantial prior contact with both CPS and other adult service and criminal justice systems. Implications for risk screening and preventive services within adult-serving systems and schools are discussed.

Palusci, V. J., Schnitzer, P. G., & Collier, A. (2023). Social and demographic characteristics of child maltreatment fatalities among children ages 5–17 years. *Child Abuse & Neglect*, *136*, 106002. DOI:10.1016/j.chiabu.2022.106002

While risk factors have been identified among infants and young children, less is known about child maltreatment fatalities among older children. In order to describe the social and demographic characteristics of children where abuse or neglect was determined to cause or contribute to their death, a secondary analysis of deaths due to child abuse or neglect among children ages 5–17 years old occurring during 2009–2018 and documented in the National Fatality Review-Case Reporting System were reviewed. compare characteristics and circumstances of the deaths by cause and manner of death and type of maltreatment were compared, exploring the role of abuse and neglect in child suicides. Child, family, and social characteristics were compared by child age (5–10 years vs. 11–17 year-olds), and by cause and manner of death. Frequencies and proportions were reported and compared using chi-square statistics. 1478 maltreatment-related deaths were identified. Higher proportions of older children were non-Hispanic white, had a history of chronic disease or disability, had problems in school, and had a history of mental health issues. Forty-three percent of the maltreatment deaths were due to homicide and 10 % by suicide. Higher proportions (65 %) of younger children (5–10 years old) died by homicide, compared to older children (35 % among

ages 11-17y). While 58 % of deaths overall were related to neglect, 68 % of deaths in older children were related to neglect, including 80 % of suicides. The causes of child maltreatment deaths among children 5–17y vary by age. Child neglect caused and/or contributed to most child suicides.

Wilson, R. F., Afifi, T. O., Yuan, K., Lyons, B. H., Fortson, B. L., Oliver, C., Watson, A., & Self-Brown, S. (2023). Child abuse-related homicides precipitated by caregiver use of harsh physical punishment. *Child Abuse & Neglect*, *135*, 105953. DOI:10.1016/j.chiabu.2022.105953

Physical punishment (PP), which may involve the use of physical force, has been linked to negative effects in children and can escalate to abusive or harsh PP, resulting in injury or death. In order to examine characteristics associated with fatal abuse involving caregiver use of harsh PP, data were from the National Violent Death Reporting System in 40 states, the District of Columbia, and Puerto Rico for years 2012–2018. Qualitative analysis was used to code textual material into categorial data, and logistic regression was used to examine associations between various characteristics and harsh PP. Approximately 4 % (n = 87) of the 2414 abuse-related homicides were known to have been precipitated by caregiver use of harsh PP. In adjusted models, homicides had greater odds of being harsh PP-related when incidents involved mothers' male companions (versus fathers), victims had a previous nonfatal injury (versus no previous nonfatal injury), and another adult participated in the fatal incident or had awareness of prior abuse/neglect (versus those without this characteristic). Two common precipitators of caregivers' use of harsh PP were: 1) child had a bathroom-related accident/soiled clothes (23.0 %; n = 20), and 2) child disobeyed a directive given by the perpetrator (17.2 %; n = 15). This study highlights characteristics associated with fatal abuse precipitated by caregiver use of harsh PP. Children were physically punished for developmentally normative behaviors. Ensuring caregivers are aware of and use effective parenting practices that focus on use of

nonphysical discipline and promote healthy child development, may help decrease harsh PP and physical abuse-related homicides among children.

Batra, E. K., Palusci, V. J., & Berg, A. (2022). Factors associated with child maltreatment fatality among young children with an open child protective services case at death. *Child Abuse Review*, *31*(2), 179-192. DOI:10.1002/car.2734

One of the goals of Child Protective Services (CPS) is to prevent maltreatment deaths. We analysed deaths of children younger than five years of age with an already open CPS case at the time of death for characteristics that might be associated with increased risk of fatality with child maltreatment. We used 2513 cases in the National Center for Fatality Review and Prevention – Case Review System during the years 2004–2016 for children ages 0–4 years who died with an already open CPS case. Among these, we compared 1370 children who died from causes determined to be 'caused or contributed to' by abuse or neglect to 1143 children who died from other causes. Those who died from maltreatment were older, experienced prior maltreatment, lived in an overcrowded residence, and had a caregiver with history of substance abuse, interpersonal violence, criminal delinquency and their own maltreatment. These risk factors and others may be associated with a higher likelihood of dying with abuse or neglect for children who already have an open CPS case.

Garcia, A. R., Ibekwe-Okafor, N., & Wasch, S. (2022). 'Almost everything else goes to the wayside': Experiences of caseworkers, middle managers and leaders responding to child fatality and near fatality cases. *Child Abuse Review*, *31*(5), e2759. DOI:10.1002/car.2759

While child welfare scholars and caseworkers have acquired a better understanding of risk factors associated with occurrences of child fatalities due to maltreatment over the past 20 years, little is known about the organisational and system-level characteristics that impact efforts to prevent or intervene in these cases. As part of a collaborative

agreement between a university-affiliated centre and a state child welfare agency, we conducted interviews by phone with 19 case managers, middle managers and regional leaders who were assigned to manage or oversee a near fatality or fatality case. They illuminated five major themes: 1) their perceived stressors and sources of support; 2) client and perpetrator risk factors; 3) system-level risk and protective factors; 4) case descriptions; and 5) lessons learned. Relying upon their lived experiences, we offer practice and policy recommendations to *Child Abuse Review* to support their efforts to prevent and respond to child fatality cases. Efforts should be devoted to evaluating strategies to reduce risk for all families before the child welfare system is involved, supporting workers when they are assigned to fatality cases by reducing caseloads and preparing them for the fatality review process, and embracing a culture of collaboration across and within child-serving systems.

Olecká, I. (2022). Early identification of risk of child abuse fatalities: Possibilities and limits of prevention. *Children*, *9*(5), 594. DOI:10.3390/children9050594

The aim of the study was to analyse the structure of registered fatal violent crimes against children under 5 years of age and to identify the main characteristics and risk factors of fatal violence against children in order to discuss the possibilities and limits of prevention of these crimes. Methods: Mixed-method design: 1. retrospective statistical analysis of data extracted from Czech statistics about crime. 2. qualitative analysis of autopsy reports and construction of serial case study. The data were pooled from two different sources: 1. Statistics about crime against children aged 0 to 5 (n = 512). 2. Autopsy reports (n = 52) of children up to the age of five. Results: The following indicators and risk factors were identified: mental disorder or cognitive deficits in parents, parents' immaturity, poor parenting skills, inadequate parenting practices, absence of a deep emotional bond with the mother, lack of parents' interest in catering to the children's needs, parents' addiction, an unprotected, hazardous environment and surroundings, household falling apart, incidence of suspected domestic violence, incidence of multiple bruises and untreated

injuries, aggressively dominant parents, poverty, absence of adequate health care, medical neglect of a child, poor health of the child and failure to thrive. Conclusions: The task for the state is to make effective use of all accessible mechanisms to improve the situation in families. Particularly in the context of the newly emerging situation of increasing uncontrolled violence in families in the context of the restrictions of the COVID-19 pandemic, this demand is more than urgent. Close attention should be paid to children who are not registered with pediatricians and fail to attend regular medical examinations. It is also vital to follow families in which violence has already been suspected in the past.

Chopin, J., Eric, B., & Matt, D. (2021). Homicidal child sexual abuse: Identifying the combinations of factors predicting a lethal outcome. *Child Abuse & Neglect*, *111*, 104799. DOI:10.1016/j.chiabu.2020.104799

Research on sexual homicide of child victims is scarce. Studies focusing on the lethal outcome in sexual crimes involving adult victims suggest that those offenders who end up killing their victims present both specific individual and crimecommission process characteristics. Nevertheless, recent studies indicate that findings with adult victims may not adequately explain the lethal outcome in sexual crimes of children. The purpose of this study is to identify specific combination of offenders, victims and crime-commission process factors associated with a lethal outcome in child sexual abuse. Participants: This study compares and analyzes the characteristics of 646 cases of extrafamilial child abuses with 136 cases of sexual homicide involving children. Bivariate analyses and sequential binomial regression analyses were conducted to identify variables associated with crime outcome. Finally, conjunctive analyses were used to identify combinations of factors that are the most likely associated with the lethal outcome. Results: Results indicate that both offenders and crime-commission process characteristics are strongly associated with sexual homicides of children. Offenders who sexually murder children are extremely instrumental and opportunistic. They are also more likely to have a life history characterized by the manifestation of diverse antisocial conducts. The findings of this

study provide important theoretical and practical implications for crime investigations, prevention, and offenders' management.

Lee, K. A., & Douglas, E. M. (2021). An exploratory study of the prosecution of fatal child maltreatment: Criminal charges filed against presumed perpetrators in the United States in 2017. *Violence and Victims*, *36*(5), 638–650. DOI:10.1891/VV-D-19-00191

In the United States child maltreatment fatalities (CMFs) do not usually meet the standard for manslaughter or murder, resulting in convictions of lesser crimes and little jail time. This exploratory study examined the charges brought against suspected CMF perpetrators in 2017. Univariate and bivariate analyses were conducted using data obtained from the Nexis Uni newspaper database, that has over 40,000 high quality media sources, for the year 2017. We found that the most frequently used charges were endangering the welfare of a child and murder, the former of which was more related to neglect-deaths and the latter to physical abuse-deaths. There was no difference between charges for male and female perpetrators. Practical implications for research, policy, and practice are discussed.

Mantell, D. M., Scharlach, K. M., Iyer, S. K., & Chergou, H. M. (2021). State-by-state analysis of child fatality reporting: A 21-year review. *International Journal on Child Maltreatment: Research, Policy and Practice*, *3*(4), 409-419. DOI: 10.1007/s42448-020-00059-1

Online reports published by Child Fatality Review Boards (CFRBs) for all 50 of the USA across 21 years, from 1998 to 2018, were downloaded and analyzed to determine the nature of the information available to the public about the causes of child fatalities. A modified coding system based on the Life Events Checklist (LEC) system of the National Center for PTSD was used to identify contexts of children's fatal injuries. Child death due to inflicted injury by other persons is the most frequently reported context category in the

21 years surveyed. The LEC-based system captured 80% of the published fatality context data. A lack of consensus was found among the states in regard to the kinds of information reported online, how the information is organized and presented, and the frequency of reporting. These inconsistencies encumber the development of national data trends and analyses. Individual case reports with specific details about child injury context and causation, child protection history, and child protection interventions were infrequent, and when present often highly redacted.

McCarroll, J. E., Fisher, J. E., Cozza, S. J., & Whalen, R. J. (2021). Child maltreatment fatality review: Purposes, processes, outcomes, and challenges. *Trauma, Violence, & Abuse*, *22*(5), 1032-1041. DOI:10.1177/1524838019900559

Better understanding of the causes and circumstances of maltreatment deaths of children is needed to prevent tragedy. The purpose of this article is to facilitate understanding of child maltreatment fatality review processes and their outcomes. A literature review was conducted through searches of the databases PubMed, PsycINFO, and EMBASE and through citations in publications. Over 165 publications were reviewed and 55 were selected for inclusion. Papers were from the United States, England, Ireland, Northern Ireland, Netherlands, France, Canada, Australia, South Africa, Switzerland, Saudi Arabia, Japan, and China. These were included if they described fatality review goals, authority, procedures, and outcomes. Although we searched databases on a continual basis during the preparation of this review, we could have missed publications, particularly those in newspapers and journals that are not included in large-scale databases or cited in other articles. Improvement of fatality review requires diligence by individuals and organizations that provide information to the reviewers. Among challenges to the review process are varying criteria for review, misclassifications of the manner of death, inadequate or incomplete forensic and medical investigations, lack of information about the perpetrator, diversity of the community, concealment of the cause of death by parents or other caregivers, and disagreement among reviewers about the

results of their inquiries. Institutional challenges are also present, which include the need for funding, privacy issues on obtaining information, updating reviewer training, lack of follow-up by institutional authorities on the recommendations of the reviews, and research facilitating the review of maltreatment fatalities.

Michaels, N. L., & Letson, M. M. (2021). Child maltreatment fatalities among children and adolescents 5–17 years old. *Child Abuse & Neglect*, *117*, 105032. DOI:10.1016/j.chiabu.2021.105032

Child maltreatment-related fatalities occur among children of all ages. However, few published studies have examined child abuse and neglect deaths among older children and adolescents. In order to epidemiologically describe child maltreatment-related fatalities among children in the United States 5-17 years old, ten years of data from the United States National Violent Death Reporting System (2006-2015) were analyzed to examine child maltreatment deaths among children 5-17 years of age. Child fatalities attributed to homicide or undetermined causes were reviewed by the study team to identify deaths related to child abuse and/or neglect, injury mechanisms, relationships between perpetrators and victims, victim and perpetrator characteristics, and circumstances surrounding the deaths. The study team identified 285 abuse- and/or neglect-related fatalities during the study period. The mean age of the victims was 9.2 years and 54.4 % of victims were male. Suspected perpetrators were most frequently mothers (28.1 %) and fathers (26.3 %). The most common injury mechanism was firearms (20.7 %). A significantly greater percentage of deaths among children 11-17 years were attributable to firearms (31.6 %), compared to deaths among children 5-10 years. Among younger children 5-10 years, blunt force trauma was the most frequent injury mechanism (22.6 %). Older children and adolescents are frequently excluded from child maltreatment research. Although child maltreatment deaths are less common among older children compared to younger children, these fatalities have unique characteristics that should be considered when developing prevention strategies.

Schneiderman, J. U., Prindle, J., & Putnam-Hornstein, E. (2021). Infant deaths from medical causes after a maltreatment report. *Pediatrics*, *148*(3), e2020048389. DOI:10.1542/peds.2020-048389

This study examines whether postneonatal infants reported for maltreatment face a heightened risk of deaths attributable to medical causes. Birth and death records for all children born in California between 2010 and 2016 (N = 3 455 985) were linked to administrative child protection system records. Infants were prospectively followed from birth through death or age 1 year. Reports of maltreatment and foster care placement episodes were modeled as time-varying covariates; sociodemographic characteristics at birth were modeled as baseline covariates. Stratified, multivariable competing risk models were used to estimate the adjusted relative hazard of postneonatal infant death attributed to a medical cause (n = 1051). After adjusting for baseline risk factors, and compared with infants never reported for maltreatment, the medical-related mortality risk was almost twice as great among infants reported once for maltreatment (hazard ratio: 1.77; 95% confidence interval: 1.36–2.30) and 3 times greater if there was >1 maltreatment report (hazard ratio: 3.27; 95% confidence interval: 2.48, 4.30). Among infants reported for maltreatment, periods of foster care placement reduced the risk of death by roughly half. Infants reported for alleged maltreatment had a higher risk of death from medical causes, with foster care emerging as protective. Targeted support services for parents and improved communication between the child protection system and the pediatric health care community is needed, especially when infants who may be medically fragile remain at home after an allegation of abuse or neglect.

Douglas, E. M., & Lee, K. A. (2020). Challenges in determining child maltreatment fatalities: What do we really know?. *Child Abuse Review*, *29*(6), 505-517. DOI:10.1002/car.2642

The challenges associated with determining causes of fatal child maltreatment have been documented by multiple professional fields and by the US government. This study

explored these challenges, as well as the relative lethality of determinations of general neglect, medical neglect and physical abuse. Existing sources of information were used for this study: (1) data from the US National Child Abuse and Neglect Data System (NCANDS) data set extracted from annual *Child Maltreatment* reports published by the US Department of Health and Human Services; and (2) information published in recent state-level child death review team (CDRT) reports. Results from the NCANDS data set indicated that more children died from general neglect ($\bar{x}$ = 70.9%) than abuse ($\bar{x}$ = 44.8%) or medical neglect ($\bar{x}$ = 8.2%). Children who experienced medical neglect died at the highest rate (6.82 per 1000 medical neglect victims), making it the most lethal, followed by physical abuse and general neglect. The findings from CDRT reports were inconsistent, with some states indicating that more children died from abuse than neglect, which is in direct contrast to national statistics. The inconsistent and confusing use of language and constructs from CDRTs has important implications for multiple child-serving fields.

Scott, D. (2020). Reporting fatal neglect in child death review. *Trauma, Violence, & Abuse*, *21*(2), 382-392. DOI:10.1177/1524838018770416

Child death reviews are conducted with the aim of preventing child deaths however, definitions, inclusion criteria for the review of child deaths and reporting practices vary across Child Death Review Teams (CDRTs). This article aims to identify a common context and understanding of fatal neglect reporting by reviewing definitional issues of fatal neglect and comparing reporting practice across a number of CDRTs. Providing a consistent context for identifying and reporting neglect-related deaths may improve the understanding of the impact of fatal neglect and the risk factors associated with it and therefore, improve the potential of CDRT review to inform prevention programs, policies, and procedures.

Frederick, J., Devaney, J., & Alisic, E. (2019). Homicides and maltreatment-related deaths of disabled children: A systematic review. *Child Abuse Review*, *28*(5), 321-338. DOI:10.1002/car.2574

This article aims to systematically review the empirical literature in relation to the homicides and maltreatment-related deaths of disabled children in order to better understand the risk factors and to assess support for the explanatory theories posited. These theories include: (1) the stress of caregiving; (2) altruistic intent; (3) lack of bonding with the child; (4) the challenging behaviours the child; (5) cultural beliefs about disabled children; and (6) evolutionary imperatives. Systematic searching techniques were used to retrieve relevant research articles in six electronic databases: AMED, CINAHL, Criminal Justice Abstracts, Medline (PubMed), PsycINFO and SCOPUS. The issue of a child being disabled was identified as a risk factor in most reviewed articles, however the definition of the term 'disability' was not consistent nor was there a consistent approach to recording children's disability. A range of potential risk factors were found, relating to the child, the perpetrator and the environment, with the pathway to harming the child involving an interactive process between each of these. The stress of caregiving and altruistic theories were the two most common explanations for homicides and maltreatment-related deaths of disabled children, although a combination of theories may provide a more comprehensive explanation of these complex events.

Grey, H. R., Ford, K., Bellis, M. A., Lowey, H., & Wood, S. (2019). Associations between childhood deaths and adverse childhood experiences: An audit of data from a child death overview panel. *Child Abuse & Neglect*, *90*, 22-31. DOI:10.1016/j.chiabu.2019.01.020

Despite strong associations between adverse childhood experiences (ACEs) and poor health, few studies have examined the cumulative impact of ACEs on causes of childhood mortality. This study explored if data routinely collected by child death overview panels (CDOPs) could be used to measure ACE exposure and examined associations between ACEs and child death categories. Data covering four years (2012–2016) of cases from a

CDOP in North West England were examined. Of 489 cases, 20% were identified as having ≥4 ACEs. Deaths of children with ≥4 ACEs were 22.26 (5.72–86.59) times more likely (than those with 0 ACEs) to be classified as 'avoidable and non-natural' causes (e.g., injury, abuse, suicide; compared with 'genetic and medical conditions'). Such children were also 3.44 (1.75–6.73) times more likely to have their deaths classified as 'chronic and acute conditions'. This study evidences that a history of ACEs can be compiled from CDOP records. Measurements of ACE prevalence in retrospective studies will miss individuals who died in childhood and may underestimate the impacts of ACEs on lifetime health. Strong associations between ACEs and deaths from 'chronic and acute conditions' suggest that ACEs may be important factors in child deaths in addition to those classified as 'avoidable and non-natural'. Results add to an already compelling case for ACE prevention in the general population and families affected by child health problems. Broader use of routinely collected child death records could play an important role in improving multi-agency awareness of ACEs and their negative health and mortality risks as well in the development of ACE informed responses.

Palusci, V. J., Council on Child Abuse and Neglect, Kay, A. J., Batra, E., Section on Child Death Review and Prevention, Moon, R. Y., Task Force on Sudden Infant Death Syndrome, National Association of Medical Examiners, Corey, T. S., Andrew, T., Graham, M., Sirotnak, A. P., Flaherty, E. G., Gavril, A. R., Gilmartin, A. B. H., Haney, S. B., Idzerda, S. M., Laskey, A., Legano, L. A.,...& Hauck, F. R. (2019). Identifying child abuse fatalities during infancy. *Pediatrics*, *144*(3), e20192076. DOI: 10.1542/peds.2019-2076

When a healthy infant dies suddenly and unexpectedly, it is critical to correctly determine if the death was caused by child abuse or neglect. Sudden unexpected infant deaths should be comprehensively investigated, ancillary tests and forensic procedures should be used to more-accurately identify the cause of death, and parents deserve to be approached in a nonaccusatory manner during the investigation. Missing a child abuse death can place other children at risk, and inappropriately approaching a sleep-related

death as maltreatment can result in inappropriate criminal and protective services investigations. Communities can learn from these deaths by using multidisciplinary child death reviews. Pediatricians can support families during investigation, advocate for and support state policies that require autopsies and scene investigation, and advocate for establishing comprehensive and fully funded child death investigation and reviews at the local and state levels. Additional funding is also needed for research to advance our ability to prevent these deaths.

Farrell, C. A., Fleegler, E. W., Monuteaux, M. C., Wilson, C. R., Christian, C. W., & Lee, L. K. (2017). Community poverty and child abuse fatalities in the United States. *Pediatrics*, *139*(5), e20161616. DOI:10.1542/peds.2016-1616

Child maltreatment remains a problem in the United States, and individual poverty is a recognized risk factor for abuse. Children in impoverished communities are at risk for negative health outcomes, but the relationship of community poverty to child abuse fatalities is not known. Our objective was to evaluate the association between county poverty concentration and rates of fatal child abuse. This was a retrospective, cross-sectional analysis of child abuse fatalities in US children 0 to 4 years of age from 1999 to 2014 by using the Centers for Disease Control and Prevention Compressed Mortality Files. Population and poverty statistics were obtained from US Census data. National child abuse fatality rates were calculated for each category of community poverty concentration. Multivariate negative binomial regression modeling assessed the relationship between county poverty concentration and child abuse fatalities. From 1999 to 2014, 11 149 children 0 to 4 years old died of child abuse; 45% (5053) were <1 year old, 56% (6283) were boys, and 58% (6480) were white. The overall rate of fatal child abuse was 3.5 per 100 000 children 0 to 4 years old. In the multivariate model, counties with the highest poverty concentration had >3 times the rate of child abuse fatalities compared with counties with the lowest poverty concentration (adjusted incidence rate ratio, 3.03; 95% confidence interval, 2.4–3.79). Higher county poverty concentration is associated

with increased rates of child abuse fatalities. This finding should inform public health officials in targeting high-risk areas for interventions and resources.

Parrish, J. W., Schnitzer, P. G., Lanier, P., Shanahan, M. E., Daniels, J. L., & Marshall, S. W. (2017). Classification of maltreatment-related mortality by Child Death Review teams: How reliable are they?. *Child Abuse & Neglect*, *67*, 362-370. DOI:10.1016/j.chiabu.2017.03.003

Accurate estimation of the incidence of maltreatment-related child mortality depends on reliable child fatality review. We examined the inter-rater reliability of maltreatment designation for two Alaskan Child Death Review (CDR) panels. Two different multidisciplinary CDR panels each reviewed a series of 101 infant and child deaths (ages 0–4 years) in Alaska. Both panels independently reviewed identical medical, autopsy, law enforcement, child welfare, and administrative records for each death utilizing the same maltreatment criteria. Percent agreement for maltreatment was 64.7% with a weighted Kappa of 0.61 (95% CI 0.51, 0.70). Across maltreatment subtypes, agreement was highest for abuse (69.3%) and lowest for negligence (60.4%). Discordance was higher if the mother was unmarried or a smoker, if residence was rural, or if there was a family history of child protective services report(s). Incidence estimates did not depend on which panel's data were used. There is substantial room for improvement in the reliability of CDR panel assessment of maltreatment related mortality. Standardized decision guidance for CDR panels may improve the reliability of their data.

Commission to Eliminate Child Abuse and Neglect Fatalities (2016). *Within our reach: A national strategy to eliminate child abuse and neglect fatalities*. Government Printing Office.

The commission’s final report discusses what was learned about the gap between good intentions and real results, and it outlines the challenges that lie ahead if we are to bridge that divide. It includes recommendations for actions that we believe will most effectively

address these challenges, including steps to be taken by the Executive Branch, Congress, and states and counties.

Berger, R. P., Sanders, D., & Rubin, D. (2015). Pediatricians' role in preventing child maltreatment fatalities: A call to action. *Pediatrics*, *136*(5), 825-827. DOI:10.1542/peds.2015-1776

Hegar, R. L., Verbovaya, O., & Watson, L. D. (2015). Child fatality in intercountry adoption: What media reports suggest about deaths of Russian children in the US. *Children and Youth Services Review*, *55*, 182-192. DOI:10.1016/j.childyouth.2015.06.002

This article addresses the ultimate risk in child placement, fatality, in the context of international adoption. It first reviews relevant literature, then profiles demographic and policy trends, followed by analysis of risk factors derived from public media reports related to the children, families, and placing agencies in 19 known cases of death of Russian children in U.S. adoptive homes since 1996. The article concludes that many of the child deaths involved recently placed boys, frequently age 3 or younger, most with special needs or challenging behaviors, and often placed along with siblings. Most of the children who died had multiple injuries characteristic of battered child syndrome. Parents were traditional couples under severe parenting stress who usually had other children, often including additional preschoolers and/or homeschoolers. Mothers frequently pled guilty to various charges, typically less serious than murder. In four situations, parents either were not charged or were found not guilty. Most placements involved agencies founded within 15 years before the child fatality, and several subsequently closed, three amid scandals unrelated to the deaths. The remaining agencies include well-regarded organizations, and five directors or representatives contributed their perspectives. This article identifies patterns and makes recommendations for practice, with the goal of reducing risk of harm to children placed internationally.

Brandon, M., Bailey, S., Belderson, P., & Larsson, B. (2014). The role of neglect in child fatality and serious injury. *Child Abuse Review*, *23*(4), 235-245. DOI:10.1002/car.2320

Although there is improved recognition of the pernicious long-term harm that stems from living with neglect during childhood, neglect is rarely associated with child fatality. This article offers a re-analysis of neglect in serious case reviews (cases of child death or serious injury related to maltreatment) in England (2003–11) from four consecutive government-commissioned national two-yearly studies. It draws on anonymised research information from 46 cases out of a total of over 800 cases. Each case was examined in depth using an ecological transactional approach, grounded in the child's experience, which promotes a dynamic understanding and assessment of the interactions between children and their families and the helping practitioners. The qualitative findings reported explore how circumstances came together when neglect had a catastrophic impact on the child and family presenting in six different ways (deprivational neglect, medical neglect, accidents with elements of forewarning, sudden unexpected deaths in infancy, physical abuse combined with neglect and young suicide). Each of the six categories raised particular issues over and above a common core of concerns around the relationship between the child and his or her parent or carer, and between parents/carers and professionals.

Buckley, H., & O'Nolan, C. (2014). Child death reviews: Developing CLEAR recommendations. *Child Abuse Review*, *23*(2), 89-103. DOI:10.1002/car.2323

This paper is based on a study commissioned by the Department of Children and Youth Affairs in Ireland. It addresses the topic of recommendations emanating from child death inquiries and reviews; it looks at the factors which privilege some recommendations over others when it comes to implementation and explores whether a more collaborative approach to development might be more beneficial. As part of the study, the researchers to propose a new model for developing recommendations which will address the

complexity of child protection practice, reflect its core principles and promote learning. The study found that recommendations were generally implemented when they fitted with social norms and aspiration of the time and particularly when they synchronized with policy developments that had already been initiated and required increased investment and public support to reach completion. The research drew a distinction between addressing and implementing recommendations, and overall found that a type of 'recommendation fatigue' had evolved following the succession if inquiries. It proposed that in the future, recommendations should be drafted in collaboration with key stakeholders which would provide the team with a range of expert knowledge strengthen the methodological rigour of the process and promote the likelihood that they would be feasible and realistic. The study proposed a new model of CLEAR recommendations (Case for change; Learning orientated: Evidence based; Assigning responsibility and easy to Review).

Damashek, A., Drass, S., & Bonner, B. L. (2014). Child maltreatment fatalities related to inadequate caregiver supervision. *Journal of Interpersonal Violence*, *29*(11), 1987-2001. DOI:10.1177/0886260513515951

More than 1,500 children died in the United States in 2011 due to child maltreatment. A substantial portion of these deaths were due to neglect. Previous research has found that a large percentage of child neglect cases involve supervisory neglect; however, the role of inadequate caregiver supervision (ICS) in child maltreatment deaths is unknown. The present study reviewed files from the Child Death Review Board in the state of Oklahoma for the years 2000 to 2003 to examine (a) how many deaths were due to inadequate caregiver supervision and (b) which child, caregiver, family, alleged perpetrator, and incident characteristics predicted risk for death related to ICS. Results indicated that almost half of the child maltreatment deaths were related to ICS. Older children and those living in homes with greater numbers of children were more likely to die from causes related to ICS. In addition, the alleged perpetrators of deaths related to ICS were more

likely to be biological parents than alleged perpetrators of non-ICS-related deaths. These findings suggest that interventions to assist caregivers in providing appropriate levels of supervision for their children may be important for reducing children's risk for death.

Douglas, E. M. (2014). A comparison of child fatalities by physical abuse versus neglect: Child, family, service, and worker characteristics. *Journal of Social Service Research*, *40*(3), 259-273. DOI:10.1080/01488376.2014.893948

In the field of child welfare, attention has been given to risk factors for child maltreatment fatalities with little attention to the difference between children who die from abuse versus neglect. As part of a larger study, child welfare workers (*n* = 104) from 14 different states responded to an anonymous online survey that described the child, family, and case characteristics before death and worker characteristics/experiences before and after death. Results supported that prior to death, neglectful families presented with less risk than abusive families, in the areas of parent–child attachment, child behavior problems, and changes in household composition while reporting that they received more services. With regard to child welfare practice, workers did not report any differences in how they handled cases before death nor did they report differences in their posttraumatic stress symptoms at the time of the survey. These findings can be used as a springboard for future research that focuses on fatal maltreatment.

Douglas, E. M., & Mohn, B. L. (2014). Fatal and non-fatal child maltreatment in the US: An analysis of child, caregiver, and service utilization with the National Child Abuse and Neglect Data Set. *Child Abuse & Neglect*, *38*(1), 42-51. DOI:10.1016/j.chiabu.2013.10.022

The purpose of this study was to compare children who are fatally and non-fatally maltreated in the United States. In this first national-comparison study, we used the Child Abuse and Neglect Data Set of children and families who encounter/receive support from child welfare services. We found that children who were fatally maltreated were younger,

were more likely to live with both their parents, and that their families experienced more financial and housing instability compared to non-fatally maltreated children. Overall, families in which children die use/receive fewer social services, as compared to families in which children live. We discuss the results with regard to child welfare practice and research.

Fraser, J., Sidebotham, P., Frederick, J., Covington, T., & Mitchell, E. A. (2014). Learning from child death review in the USA, England, Australia, and New Zealand. *The Lancet*, *384*(9946), 894-903. DOI:10.1016/S0140-6736(13)61089-2

Despite pronounced reductions in child mortality in industrialised countries, variations exist within and between countries. Many child deaths are preventable, and much could be done to further reduce mortality. For the family, their community, and professionals caring for them, every child's death is a tragedy. Systematic review of all child deaths is grounded in respect for the rights of children and their families, and aimed towards the prevention of future child deaths. In a Series of three papers, we discuss child death in high-income countries in the context of evolving child death review processes. This paper outlines the background to and development of child death review in the USA, England, Australia, and New Zealand. We consider the purpose, process, and outputs of child death review, and discuss how these factors can contribute to a greater understanding of children's deaths and to knowledge for the prevention of future child deaths.

Krugman, S. D., & Lane, W. G. (2014). Fatal child abuse. In J. Korbin and R. Krugman (Eds.), *Handbook of child maltreatment* (Vol 2, pp. 99-112). Springer, Dordrecht. DOI:10.1007/978-94-007-7208-3_5

According to official statistics, more than 1,500 children each year die from child abuse and neglect. However, due to inadequate death investigations and inconsistent child fatality review processes, the actual number is likely higher. Infants under 1 year old

account for 47 % of child abuse fatalities, most often as a result of abusive head trauma (AHT). Other causes of fatal child abuse include suffocation, Munchausen Syndrome by Proxy, fatal poisoning, and neglect. While not often discussed, child neglect plays a role in two thirds of all child maltreatment fatalities and can occur as a result of failure to provide medical treatment, starvation, drowning, fires, and heat induced from automobiles. No single effective strategy exists to prevent child abuse fatalities. Global home visiting strategies as well as AHT counseling efforts in nurseries and communities are often employed but clear evidence to support a single intervention is lacking.

Palusci, V. J., & Covington, T. M. (2014). Child maltreatment deaths in the US national child death review case reporting system. *Child Abuse & Neglect*, *38*(1), 25-36. DOI:10.1016/j.chiabu.2013.08.014

Comprehensive reviews of child death are increasingly conducted throughout the world, although limited information is available about how this information is systematically used to prevent future deaths. To address this need, we used cases from 2005 to 2009 in the U.S. National Child Death Review Case Reporting System to compare child and offender characteristics and to link that information with actions taken or recommended by review teams. Child, caretaker, and offender characteristics, and outcomes were compared to team responses, and findings were compared to published case series. Among 49,947 child deaths from 23 states entered into the Case Reporting System during the study period, there were 2,285 cases in which child maltreatment caused or contributed to fatality. Over one-half had neglect identified as the maltreatment, and 30% had abusive head trauma. Several child and offender characteristics were associated with specific maltreatment subtypes, and child death review teams recommended and/or planned several activities in their communities. Case characteristics were similar to those published in other reports of child maltreatment deaths. Teams implemented 109 actions or strategies after their review, and we found that aggregating information from child death reviews offers important insights into understanding and preventing

future deaths. The National Child Death Review Case Reporting System contains information about a large population which confirms and expands our knowledge about child maltreatment deaths and which can be used by communities for future action.

Ross, A. H., & Juarez, C. A. (2014). A brief history of fatal child maltreatment and neglect. *Forensic Science, Medicine, and Pathology*, *10*, 413–422. DOI:10.1007/s12024-014-9531-1

Child abuse encompasses four major forms of abuse: physical abuse, sexual abuse, psychological abuse, and neglect. The United States retains one of the worst records of child abuse in the industrialized world. It has also been determined that a large portion of these cases are missed and go undocumented in state and federal reporting agencies. In addition, disparate risk factors have been identified for physical abuse and neglect cases, but substance abuse has been found to be a significant factor in all forms of abuse. Fatal child maltreatment and neglect investigations require a multi-pronged and multidisciplinary approach requiring the coordination and information gathering from various agencies. A major difficulty in determining the accidental or non-accidental nature of these cases is that the account surrounding the events of the death of child is acquired from the caretaker. In this review, we outline common diagnostic characteristics and patterns of non-accidental injuries and neglect as a result of nutritional deprivation.

Vincent, S. (2014). Child death review processes: A six-country comparison. *Child Abuse Review*, *23*(2), 116-129. DOI:10.1002/car.2276

This paper compares and contrasts child death review (CDR) structures and processes in six countries – Australia, New Zealand, the United States, Canada, England and Wales. It presents findings from a comparative study based on analysis of data from 18 case studies. Data were collected through a combination of documentary analysis, interviews and observations. The study found that CDR processes vary according to: where the

function is located and whether review is undertaken at state, local or national level; whether review is rooted in legislation; the focus of review; whether dedicated funding is provided; whether families are involved in the process; and whether structures are supported by useful data systems. It was not possible to evaluate the effectiveness of different review systems but the findings suggest that structure makes little difference in terms of determining the extent to which CDR findings inform prevention effort and activity. While factors such as lack of funding, lack of national data, or lack of legislation may hinder the work of CDR teams, CDR findings have informed prevention initiatives despite such barriers.

Whitt-Woosley, A., Sprang, G., & Gustman, B. D. (2014). Lives at risk: Uncovering factors associated with fatal child maltreatment. *Children and Youth Services Review, 47*(Part 3), 307-313. DOI:10.1016/j.childyouth.2014.10.007

Awareness of cases of fatal child maltreatment has risen significantly in recent years suggesting the presence of a serious threat to young children despite extensive child welfare, clinical and legal responses to the issue. The purpose of this study was to identify differences between high risk child maltreatment and fatal risk cases and associated child protective service factors. For this study, 50 cases of fatal and near fatal child maltreatment were compared to a random sample of 50 moderate to severe maltreatment cases to determine predictors of group affiliation using a transactional model of child maltreatment to guide model development. Results indicate that recognition of having a male perpetrator, in cases of physical abuse, in families with approximately two children living in more rural environments notably improved the odds of predicting fatal risk cases. Prior referrals to Adult Protective Services, less out of home care and poor utilization of in-home services were also noted differences in the service records of the groups. Implications regarding early intervention and child protection measures that could be utilized to reduce risk are offered.

Berson, I. R., & Yampolskaya, S. (2013). Factors predicting child maltreatment fatalities: A competing risk model. *Journal of Child & Adolescent Trauma*, 6, 173-186. DOI:10.1080/19361521.2013.811457

This study examined different types of child maltreatment fatalities and factors associated with child death in Florida. The study design consisted of a two-group comparison: children who died as a result of abuse and those who died as a result of neglect. Predictors for abuse- versus neglect-related death were analyzed using competing-risks survival analysis. Findings revealed a unique trend associated with maltreatment fatalities: While child's enrollment in daycare or school served as a protective factor, being seen by a child protection agency at the time of the incident predicted the earlier fatal outcome. Implications of the findings were discussed.

Chahine, Z., & Sanders, D. (2013). The road ahead: Comprehensive and innovative approaches for improving safety and preventing child maltreatment fatalities. *Child Welfare*, *92*(2), 237-253.

This article presents a high-level overview of the complex issues, opportunities, and challenges involved in improving child safety and preventing child maltreatment fatalities. It emphasizes that improving measurement and classification is critical to understanding and preventing child maltreatment fatalities. It also stresses the need to reframe child maltreatment interventions from a public health perspective. The article draws on the lessons learned from state-of-the-art safety engineering innovations, research, and other expert recommendations presented in this special issue that can inform future policy and practice direction in this important area.

Child Welfare Information Gateway. (2013). *Child abuse and neglect fatalities 2011: Statistics and interventions.* U.S. Department of Health and Human Services, Children's Bureau.

Despite the efforts of the child protection system, child maltreatment fatalities remain a serious problem. Although the untimely deaths of children due to illness and accidents have been closely monitored, deaths that result from physical assault or severe neglect can be more difficult to track. The circumstances surrounding a child's death, its investigation, and communication across all the disciplines involved complicate data collection.

Damashek, A., Nelson, M. M., & Bonner, B. L. (2013). Fatal child maltreatment: Characteristics of deaths from physical abuse versus neglect. *Child Abuse & Neglect*, *37*(10), 735-744. DOI:10.1016/j.chiabu.2013.04.014

This study examined victim, family, and alleged perpetrator characteristics associated with fatal child maltreatment (FCM) in 685 cases identified by child welfare services in the state of Oklahoma over a 21-year period. Analyses also examined differences in child, family, and alleged perpetrator characteristics of deaths from abuse versus neglect. Case information was drawn from child welfare investigation records for all FCM cases identified by the state Department of Human Services. Fatal neglect accounted for the majority (51%) of deaths. Children were primarily younger than age 5, and parents were most frequently the alleged perpetrators. Moreover, most victims had not been the subject of a child welfare report prior to their death. A greater number of children in the home and previous family involvement with child welfare increased children's likelihood of dying from neglect, rather than physical abuse. In addition, alleged perpetrators of neglect were more likely to be female and biologically related to the victim. These results indicate that there are unique family risk factors for death from neglect (versus physical abuse) that may be important to consider when selecting or developing prevention efforts.

Douglas, E. M. (2013). Case, service and family characteristics of households that experience a child maltreatment fatality in the United States. *Child Abuse Review*, *22*(5), 311-326. DOI:10.1002/car.2236

Child maltreatment fatalities have increasingly received attention over the past three decades and yet there is a dearth of information concerning case, service and family/household factors associated with maltreatment fatalities. This is a US multi-state study of 135 child welfare workers who experienced the death of a child on their caseload. They reported on the case, service and family/household characteristics of a child who died on their caseload. Results indicate that workers had seen victims one week prior to their death and were closely monitoring families. The most frequently mentioned family characteristics included: parental unemployment, parental mental health, experiencing a major life event and parents' inappropriate age expectations of the child. Parental alcohol and substance use were more common among infant victims; and parental perceptions of the child being 'difficult' were more common among older victims. The results are discussed with regard to future research and prevention for the field. Copyright © 2013 John Wiley & Sons, Ltd. Key Practitioner Messages: The primary findings of this study indicate that: Workers have regular contact with children leading up to the time of their death., Children die even when they are being closely monitored and have had a full-risk assessment., Families where children died were not using very many services.

Hamilton, L. (2013). Assessing children's risk for homicide in the context of domestic violence. *Journal of Family Violence*, *28*, 179-189. DOI:10.1007/s10896-012-9473-x

Increasing evidence indicates that children are at risk of homicide in the context of domestic violence. Using a retrospective case analysis of 84 domestic homicide cases, this study sought to identify the unique factors that place a child at risk of homicide. Three groups of domestic homicide cases in which there were no children in the home (No Child in the Home, n=44), a child was targeted (Child Target, n=13), and a child was present, but not targeted (No Child Target, n=27) were compared. Overall, there were no

significant differences amongst cases involving children (targeted or not) on major factors except for the higher number of agencies involved with couples with children. Few cases had risk assessment or safety plans completed. Despite the study limitations, the findings speak to the need for professionals to assess child risk and include children in safety planning in all cases of domestic violence.

Olszowy, L., Jaffe, P. G., Campbell, M., & Hamilton, L. H. A. (2013). Effectiveness of risk assessment tools in differentiating child homicides from other domestic homicide cases. *Journal of Child Custody*, *10*(2), 185-206. DOI:10.1080/15379418.2013.796267

A retrospective case analysis of 40 domestic homicides was conducted to determine if risk assessment tools currently being used for adult victims of domestic violence (DA, ODARA, and B-SAFER) are of value in identifying a child's risk for lethality in the context of domestic violence. Child homicides were compared to cases where a mother was killed but the children were not targeted. Results revealed no differences between the two groups in terms of the risk assessment tools. One item on the Danger Assessment and one item on the B-SAFER were significantly associated with child homicide cases. Implications for professionals around assessing risk of lethality for children living with domestic violence and developing safety plans that include the children are discussed.

Pecora, P. J., Chahine, Z., & Graham, J. C. (2013). Safety and risk assessment frameworks: Overview and implications for child maltreatment fatalities. *Child Welfare*, *92*(2), 143-160.

This article highlights current models used in child protection to assess safety and risk, and discusses implications for child maltreatment fatalities. The authors advance that current risk and safety practice approaches were not designed to accurately estimate the likelihood of low base-rate phenomena and have not been empirically tested in their ability to predict or prevent severe or fatal child maltreatment. They advance that,

regardless of the ultimate effectiveness of safety and risk tools, competent assessment and decision making in child protection depend on sound professional judgment and a comprehensive systemic approach that transcends the use of specific tools.

Putnam-Hornstein, E., Cleves, M. A., Licht, R., & Needell, B. (2013). Risk of fatal injury in young children following abuse allegations: Evidence from a prospective, population-based study. *American Journal of Public Health*, *103*(10), e39-e44. DOI:10.2105/AJPH.2013.301516

We examined variations in children's risk of an unintentional or intentional fatal injury following an allegation of physical abuse, neglect, or other maltreatment. We linked records of 514 232 children born in California from 1999 to 2006 and referred to child protective services for maltreatment to vital birth and death data. We used multivariable Cox regression models to estimate variations in risk of fatal injury before age 5 years and modeled maltreatment allegations as time-varying covariates. Children with a previous allegation of physical abuse sustained fatal injuries at 1.7 times the rate of children referred for neglect. Stratification by manner of injury showed that children with an allegation of physical abuse died from intentional injuries at a rate 5 times as high as that for children with an allegation of neglect, yet faced a significantly lower risk of unintentional fatal injury. These data suggest conceptual differences between physical abuse and neglect. Findings indicate that interventions consistent with the form of alleged maltreatment may be appropriate, and heightened monitoring of young children referred for physical abuse may advance child protection.

Putnam-Hornstein, E., Wood, J. N., Fluke, J., Yoshioka-Maxwell, A., & Berger, R. P. (2013). Preventing severe and fatal child maltreatment: Making the case for the expanded use and integration of data. *Child Welfare*, *92*(2), 59-75.

In this article we examine risk factors for severe and fatal child maltreatment. These factors emerge from studies based on different data sources, including official child

maltreatment data, emergency department and hospitalization data, death certificates, and data from child death review teams. The empirical literature reflects a growing effort to overcome the measurement uncertainties of any one individual data system. After review and reflection upon what is known, we consider how integrating this information can advance efforts to protect children, providing examples where the use and linkage of multiple sources of data may enhance surveillance, improve front-end decision making, and support cost-effective research and evaluation.

Richmond-Crum, M., Joyner, C., Fogerty, S., Ellis, M., & Saul, J. (2013). Applying a public health approach: The role of state health departments in preventing maltreatment and fatalities of children. *Child Welfare*, *92*(2), 99-117.

Child maltreatment prevention is traditionally conceptualized as a social services and criminal justice issue. Although these responses are critical and important, alone they are insufficient to prevent the problem. A public health approach is essential to realizing the prevention of child abuse and neglect. This paper discusses the public health model and social-ecology framework as ways to understand and address child maltreatment prevention and discusses the critical role health departments can have in preventing abuse and neglect. Information from an environmental scan of state public health departments is provided to increase understanding of the context in which state public health departments operate. Finally, an example from North Carolina provides a practical look at one state's effort to create a cross-sector system of prevention that promotes safe, stable, and nurturing relationships and environments for children and families.

Sheldon-Sherman, J., Wilson, D., & Smith, S. (2013). Extent and nature of child maltreatment-related fatalities: Implications for policy and practice. *Child Welfare*, *92*(2), 41-58.

This article reviews significant research findings regarding child maltreatment fatalities over the last thirty years. Notably, the article focuses on several important subsets of children who die from maltreatment, including young children, children reported to child protective services, and children who live in families with poor parental attachment, mental illness, substance abuse, and domestic violence. The article then sets forth three proposals for broadening the United States' approach to child protection and reducing child maltreatment fatalities.

Welch, G. L., & Bonner, B. L. (2013). Fatal child neglect: Characteristics, causation, and strategies for prevention. *Child Abuse & Neglect*, 37(10), 745-752. DOI:10.1016/j.chiabu.2013.05.008

Research in child fatalities because of abuse and neglect has continued to increase, yet the mechanisms of the death incident and risk factors for these deaths remain unclear. The purpose of this study was to systematically examine the types of neglect that resulted in children's deaths as determined by child welfare and a child death review board. This case review study reviewed 22 years of data (n = 372) of child fatalities attributed solely to neglect taken from a larger sample (N = 754) of abuse and neglect death cases spanning the years 1987–2008. The file information reviewed was provided by the Oklahoma Child Death Review Board (CDRB) and the Oklahoma Department of Human Services (DHS) Division of Children and Family Services. Variables of interest were child age, ethnicity, and birth order; parental age and ethnicity; cause of death as determined by child protective services (CPS); and involvement with DHS at the time of the fatal event. Three categories of fatal neglect – supervisory neglect, deprivation of needs, and medical neglect – were identified and analyzed. Results found an overwhelming presence of supervisory neglect in child neglect fatalities and indicated no significant differences

between children living in rural and urban settings. Young children and male children comprised the majority of fatalities, and African American and Native American children were over-represented in the sample when compared to the state population. This study underscores the critical need for prevention and educational programming related to appropriate adult supervision and adequate safety measures to prevent a child's death because of neglect.

Tilak, G. S., & Pollock, A. N. (2013). Missed opportunities in fatal child abuse. *Pediatric Emergency Care*, *29*(5), 685-687. DOI:10.1097/PEC.0b013e31828f3e39

Douglas, E. M. (2012). Child welfare workers' training, knowledge, and practice concerns regarding child maltreatment fatalities: An exploratory, multi-state analysis. *Journal of Public Child Welfare*, *6*(5), 659-677. DOI:10.1080/15548732.2012.723975

Research has rarely focused on child welfare professionals as agents of prevention for maltreatment fatalities. This study presents results on 426 child welfare workers' training, knowledge, and practice concerns regarding fatalities. Workers' knowledge of risk varied and revealed deficits in knowledge of parent and household risk factors. Receipt of training had a minor impact on knowledge. More than 25% of workers reported that a parent had disclosed potential intent to kill his/her child. Workers worried that a child will die on their caseloads; they reported assessing for risk, but wanting additional training. Implications are discussed for both research and practice communities.

Jaffe, P. G., Campbell, M., Hamilton, L. H., & Juodis, M. (2012). Children in danger of domestic homicide. *Child Abuse & Neglect, 36*(1), 71-74. DOI:10.1016/j.chiabu.2011.06.008

Child maltreatment and domestic violence were once considered separate topics both in research and in clinical practice. This brief communication attempts to shed light on

the lethal risk posed to children living with domestic violence. It is hoped that the acknowledgment of these risks will better inform research and clinical practice to protect children in these circumstances.

Schnitzer, P. G., Gulino, S. P., & Yuan, Y. Y. (2012). Advancing public health surveillance to estimate child maltreatment fatalities: Review and recommendations. *Child Welfare*, *92*(2), 77-98.

Fatal child maltreatment is a compelling problem in the United States. National estimates of fatal child maltreatment, based largely on child welfare data, have fluctuated around 1,500 deaths annually for the past ten years. However, the limitations of child welfare and other mortality data to accurately enumerate fatal child maltreatment are well documented. As a result of these limitations, the true magnitude of fatal child maltreatment remains unknown. Public health surveillance has been proposed as a mechanism to improve estimation of fatal child maltreatment, as well as to collect and analyze relevant risk factor data for the ultimate goal of developing prevention strategies. This paper describes public health surveillance efforts undertaken to improve estimation of fatal child maltreatment, and presents the unique challenges of identifying fatal child neglect. The strengths and limitations of existing sources of child maltreatment fatality data are reviewed and broad recommendations for strategies to advance public health surveillance of fatal child maltreatment are presented.

Douglas, E. M., & McCarthy, S. C. (2011). Child fatality review teams: A content analysis of social policy. *Child Welfare*, *90*(3), 91-110.

Child fatality review teams (CFRTs) have existed since the 1970s; yet, a comprehensive understanding of their procedures, practices, and outcomes is lacking. his article addresses that gap in this study of CFRT state statutes. Findings indicate CFRT laws address nine areas of practice, from team composition, to purpose, to outcomes. Results

also indicate that laws address prevention three times as often as investigation, but that both areas are related to state crime rates.

Douglas, E. M., & McCarthy, S. C. (2011). Child maltreatment fatalities: Predicting rates and the efficacy of child welfare policy. *Journal of Policy Practice*, *10*(2), 128-143. DOI:10.1080/15588742.2011.555323

Scientists have studied child maltreatment fatalities (CMFs) for several decades, yet little research has examined the social context in which CMFs occur and whether prevention efforts are effective. Using state-level data from 2006-2008, we examine the social context in which CMFs occur and conduct a five-year follow-up to a study that found media attention predicted CMF-related legislation (Douglas, 2009). The results indicate that the social context in which children live are important; poverty and region are the strongest predictors of CMFs and states that passed legislation to prevent future maltreatment fatalities did not experience a decline in the death rate. Implications for policy and practice are discussed.

Putnam-Hornstein, E. (2011). Report of maltreatment as a risk factor for injury death a prospective birth cohort study. *Child Maltreatment*, *16*(3), 163-174. DOI:10.1177/1077559511411179

This article presents a population-based study of early childhood injury mortality following a nonfatal allegation of maltreatment. Findings are based on a unique data set constructed by establishing child-level linkages between vital birth records, administrative child protective services records, and vital death records. These linked data reflect over 4.3 million children born in California between 1999 and 2006 and provide a longitudinal record of maltreatment allegations and death. Of interest was whether children reported for nonfatal maltreatment subsequently faced a heightened risk of unintentional and intentional injury mortality during the first 5 years of life. Findings

indicate that after adjusting for risk factors at birth, children with a prior allegation of maltreatment died from intentional injuries at a rate that was 5.9 times greater than unreported children (95% CI [4.39, 7.81]) and died from unintentional injuries at twice the rate of unreported children (95% CI [1.71, 2.36]). A prior allegation to CPS proved to be the strongest independent risk factor for injury mortality before the age of five.

Damashek, A., & Bonner, B. L. (2010). Factors related to sibling removal after a child maltreatment fatality. *Child Abuse & Neglect*, *34*(8), 563-569. DOI:10.1016/j.chiabu.2009.12.006

Many children who die from abuse or neglect are survived by siblings. However, little data are available about what happens to these siblings after the victim's death, such as whether they are removed from their home. Even less is known about how decisions are made regarding sibling removal following a child fatality. This study examined social-ecological factors related to the likelihood that siblings would be removed from their homes after a child maltreatment fatality. This study utilized Oklahoma child death review and child welfare data from 1993 to 2003 for 250 families to examine which sibling, caregiver, alleged perpetrator, family, community, and maltreatment characteristics were related to sibling removal following a child maltreatment fatality. Logistic regression analyses indicated that younger sibling age, more previous family reports to child welfare, and type of maltreatment (i.e., abuse rather than neglect) predicted greater likelihood of sibling removal. The sibling and family factors found to be related to sibling removal are consistent with literature indicating that these variables are associated with death from child maltreatment. Few caregiver and family variables were predictive of sibling removal, despite evidence that such variables are related to child maltreatment fatalities. Further research that investigates siblings' return to their homes and subsequent CPS referrals would help to clarify whether decisions about sibling removal were useful in protecting siblings from future maltreatment. It may be important for child

welfare workers to consider more caregiver and family factors when making removal decisions after a child maltreatment fatality.

Klevens, J., & Leeb, R. T. (2010). Child maltreatment fatalities in children under 5: Findings from the National Violence Death Reporting System. *Child Abuse & Neglect, 34*(4), 262-266. DOI:10.1016/j.chiabu.2009.07.005

Objective: To describe the distribution of child maltreatment fatalities of children under 5 by age, sex, race/ethnicity, type of maltreatment, and relationship to alleged perpetrator using data from the National Violent Death Reporting System (NVDRS). Study design: Two independent coders reviewed information from death certificates, medical examiner and police reports corresponding to all deaths in children less than 5 years of age reported to NVDRS in 16 states. Results: Of the 1,374 deaths for children under 5 reported to NVDRS, 600 were considered attributable to child maltreatment. Over a half of the 600 victims of child maltreatment in this age group were under 1 year old, 59% were male, 42% non-Hispanic Whites, and 38% were non-Hispanic Blacks. Two thirds of child maltreatment fatalities in children under 5 were classified as being due to abusive head trauma (AHT), 27.5% as other types of physical abuse, and 10% as neglect. Based on these data, fathers or their substitutes were significantly more likely than mothers to be identified as alleged perpetrators for AHT and other types of physical abuse, while mothers were more likely to be assigned responsibility for neglect. Conclusions: Among children under 5 years, children under 1 are the main age group contributing to child maltreatment fatalities in the NVDRS. AHT is the main cause of death in these data. These findings are limited by underascertainment of cases and fair inter-rater reliability of coding. Practice implications: The findings suggest the need to develop and evaluate interventions targeting AHT to reduce the overall number of child maltreatment deaths in young children. These interventions should make special efforts to include fathers and their substitutes. [Copyright Elsevier]

Palusci, V. J., Yager, S., & Covington, T. M. (2010). Effects of a citizens review panel in preventing child maltreatment fatalities. *Child Abuse & Neglect*, *34*(5), 324-331. DOI:10.1016/j.chiabu.2009.09.018

Palusci, V. J., Wirtz, S. J., & Covington, T. M. (2010). Using capture-recapture methods to better ascertain the incidence of fatal child maltreatment. *Child Abuse & Neglect*, *34*(6), 396-402. DOI:10.1016/j.chiabu.2009.11.002

Objectives: To (1) test the use of capture-recapture methods to estimate the total number of child maltreatment deaths in a single state using information from death certificates, child welfare reports, child death review teams, and uniform crime reports; and to (2) compare these estimates to the number of maltreatment deaths identified through an in-depth "gold standard" review. Child maltreatment deaths were identified in four existing administrative data sources: (1) death reports in our state vital statistics (DC); (2) child death review team reports (CDR); (3) homicide reports filed by our state police agency as uniform crime report (UCR) supplements for the FBI; and (4) abstracted reports of a minor's death from our state child protective services (CPS) agency. Capture-recapture pair-wise and pooled comparisons were then applied to estimate the numbers of abuse and total maltreatment deaths and were compared to the number of cases identified by independent case review. There were a total of 194 child maltreatment deaths in Michigan during 2000–2001 with 66 due to physical abuse. Capture-recapture analysis estimated the mean number of total child maltreatment deaths as 101.02 (95%CI = 92.52, 109.53), with abuse deaths of 64.55 (60.85, 68.25). Most pair-wise and pooled comparisons worked equally well for abuse deaths, but estimates for total child maltreatment deaths were low. Capture-recapture methods applied to existing administrative datasets produced accurate estimates of child abuse deaths but were not useful in producing reliable estimates of total child maltreatment deaths due to undercounting neglect-related deaths in all existing administrative data sets. The underlying assumptions for capture-recapture methods were not met for neglect deaths. Local and/or state teams conducting ongoing intensive case review may yet remain the

best way to identify the total number of child maltreatment deaths. Capture-recapture methods allow for more accurate estimation of the true number of child physical abuse deaths than does using single existing sources of child fatality information, but deaths from causes other than abuse are undercounted. Child maltreatment fatality surveillance requires a systematic process and standard criteria for identifying cases of maltreatment, particularly neglect-related child deaths.

Policy Statement—Child Fatality Review. (2010). *Pediatrics*, *126*(3), 592-596. DOI:10.1542/peds.2010-2006

Injury remains the leading cause of pediatric mortality and requires public health approaches to reduce preventable deaths. Child fatality review teams, first established to review suspicious child deaths involving abuse or neglect, have expanded toward a public health model of prevention of child fatality through systematic review of child deaths from birth through adolescence. Approximately half of all states report reviewing child deaths from all causes, and the process of fatality review has identified effective local and state prevention strategies for reducing child deaths. This expanded approach can be a powerful tool in understanding the epidemiology and preventability of child death locally, regionally, and nationally; improving accuracy of vital statistics data; and identifying public health and legislative strategies for reducing preventable child fatalities. The American Academy of Pediatrics supports the development of federal and state legislation to enhance the child fatality review process and recommends that pediatricians become involved in local and state child death reviews.

Fujiwara, T., Barber, C., Schaechter, J., & Hemenway, D. (2009). Characteristics of infant homicides: Findings from a US multisite reporting system. *Pediatrics*, *124*(2), e210-e217. DOI:10.1542/peds.2008-3675

The purpose of this study was to describe homicides of infants (children <2 years of age) in the U.S. Cases were derived from the National Violent Injury Statistics System; 71 incidents involving 72 infant homicides were in the data set. Type 1 involved beating/shaking injuries inflicted by a caretaker; type 2 involved all other homicides (including neonaticide, intimate partner problem-related homicide, crime-related death, and other types). Seventy-five percent of the incidents were type 1 incidents, perpetrated mainly by men (83%; typically the infant's father or the boyfriend of the infant's mother). In 85% of the type 1 incidents, the infant was transported to the hospital, usually at the initiative of the perpetrator or another household member. In almost one half of the type 1 incidents, a false story was offered initially to explain the injuries. In contrast, the type 2 incidents (16 cases) were perpetrated mainly by women (11 of 16 cases) and involved methods such as poisoning, drowning, sharp instruments, or withdrawal of food and water; most infants were not taken to the hospital. Although 93% of incidents were perpetrated by caretakers, the large differences between the 2 incident types suggest different avenues for prevention. The circumstances involved in the type 1 homicides (beatings by caretakers) suggested that those attacks occurred impulsively, death was unintended, and emergency care was summoned, often with a false story. Previous abuse was suspected in more than one half of those incidents.

Ross, A. H., Abel, S. M., & Radisch, D. (2009). Pattern of injury in child fatalities resulting from child abuse. *Forensic Science International*, *188*(1-3), 99-102. DOI:10.1016/j.forsciint.2009.03.021

According to the US Department of Health and Human Services, in 2005, an estimated 1460 children died of maltreatment. The purpose of this study is to further examine the pattern of bony injuries in child maltreatment fatalities, with an emphasis on the

prevalence of antemortem fractures and the presence of associated perimortem fractures. The sample was 162 male and female children. The majority of the data were collected from the case files of the NC Child Fatality Prevention Team at the Office of the Chief Medical Examiner in Chapel Hill, North Carolina (n =152) spanning from 2000 to 2005. An additional 10 cases from 2001 to 2006 were included from the Charleston County Coroner"s Office, Charleston, SC. Six age categories were used in this study: 0–3 months, 4–6 months, 7–9 months, 10–16 months, 17 months to 2 years, and 2–6 years. Lesions were documented and categorized into four general body loci: craniofacial, thoraco/abdominal, appendicular, and multiple. The peak age categories of death were 0–3 months (25%) and 2–6 years (19%), with 50% of deaths occurring in infants 9 months old or younger. The body locus most frequently affected was craniofacial.

Douglas, E. M., & Cunningham, J. M. (2008). Recommendations from child fatality review teams: Results of a US nationwide exploratory study concerning maltreatment fatalities and social service delivery. *Child Abuse Review*, *17*(5), 331-351. DOI:10.1002/car.1044

Multidisciplinary child fatality review teams (CFRT) have existed in the United States (US) for almost 30 years; the products of the review process, however, remain unexamined. This study reviewed reports from CFRT throughout the US to compile and evaluate the identification of problems and recommendations by professionals concerning child maltreatment fatalities. Team- and state-level data were also used for analysis to better understand the context in which recommendations are made. Over 300 recommendations for change from CFRT were grouped into 11 macro categories. The frequency of each type of recommendation and examples from each category are provided. The authors provide recommendations of their own for improvements in CFRT outputs.

Schnitzer, P. G., Covington, T. M., Wirtz, S. J., Verhoek-Oftedahl, W., & Palusci, V. J. (2008). Public health surveillance of fatal child maltreatment: Analysis of 3 state programs. *American Journal of Public Health*, *98*(2), 296-303. DOI:10.2105/AJPH.2006.087783

We sought to describe approaches to surveillance of fatal child maltreatment and to identify options for improving case ascertainment. Three states—California, Michigan, and Rhode Island—used multiple data sources for surveillance. Potential cases were identified, operational definitions were applied, and the number of maltreatment deaths was determined. These programs identified 258 maltreatment deaths in California, 192 in Michigan, and 60 in Rhode Island. Corresponding maltreatment fatality rates ranged from 2.5 per 100,000 population in Michigan to 8.8 in Rhode Island. Most deaths were identified by child death review teams in Rhode Island (98%), Uniform Crime Reports in California (56%), and child welfare agency data in Michigan (44%). Compared with the total number of cases identified, child welfare agency (the official source for maltreatment reports) and death certificate data underascertain child maltreatment deaths by 55% to 76% and 80% to 90%, respectively. In all 3 states, more than 90% of cases ascertained could be identified by combining 2 data sources. No single data source was adequate for thorough surveillance of fatal child maltreatment, but combining just 2 sources substantially increased case ascertainment. The child death review team process may be the most promising surveillance approach.

Jonson-Reid, M., Chance, T., & Drake, B. (2007). Risk of death among children reported for nonfatal maltreatment. *Child Maltreatment*, *12*(1), 86-95. DOI:10.1177/1077559506296722

This article presents analyses of longitudinal data to explore whether low-income children who survived a first incident of reported maltreatment were at higher risk of later childhood death compared to a matched comparison group of low-income children without reports of maltreatment (n = 7,433). Compared to the comparison group, children in the maltreatment group had about twice the risk of death

before age 18 (0.51% vs. 0.27%). Among children with maltreatment reports, median time from the first report to subsequent death was 9 months. The majority of deaths among children who were reported for maltreatment could be categorized as preventable (accidents or recurrent maltreatment) as compared to resulting from severe health conditions.

Miller, L. C., Chan, W., Reece, R. A., Tirella, L. G., & Pertman, A. (2007). Child abuse fatalities among internationally adopted children. *Child Maltreatment*, *12*(4), 378- 380. DOI:10.1177/1077559507306716

Since 1996 there have been 18 fatalities of internationally adopted children (17 families) in which abuse and/or neglect by their adoptive parents was suspected or proven. Seven girls and 11 boys (14 adopted from Russia, 2 from China, and 2 from Guatemala) have died from causes related to head trauma, suffocation, or neglect. In 12 of these cases, the mothers were directly accused in the deaths of their children; and in 4 cases, fathers were directly accused (1 of the fathers committed suicide after killing his wife and 2 children). In the remaining two cases, both parents were accused. The victims were 3 years old or younger in 12 of the 18 cases; the other victims were between the ages of 5 and 11 years. Nearly one-third of these children died within 6 months of their adoptive placements, and more than one-half of the deaths occurred within the first year after adoption. These 18 cases of abuse and neglect resulted from extreme circumstances and do not reflect the norm among families of internationally adopted children; however, pediatricians and other professionals who care for internationally adopted children must be especially vigilant in identifying parents who may show signs of depression, stress, or extreme disappointment. "Postadoption depression" is becoming more widely recognized and may be more common than postpartum depression.

Jaffe, P. G., & Juodis, M. (2006). Children as victims and witnesses of domestic homicide: Lessons learned from domestic violence death review committees. *Juvenile and Family Court Journal*, *57*(3), 13-28. DOI:10.1111/j.1755-6988.2006.tb00125.x

Domestic Violence Death Review Committees (DVDRCs) are interdisciplinary teams dedicated to examining domestic homicide and recommending how to prevent future tragedies by comprehensively examining individual cases. This article summarizes the findings of 15 DVDRCs concerning children as victims and witnesses. The findings reflect that an alarming number of children are victimized by domestic violence. Themes in the recommendations are grouped in relationship to: (1) training and policy development; (2) resource development; (3) coordination of services; (4) legislative reform; and (5) prevention programs. The recommendations are critical for criminal and civil courts as well as enhancing collaboration between the justice system and community partners in preventing domestic homicide.

Jenny, C., & Isaac, R. (2006). The relation between child death and child maltreatment. *Archives of Disease in Childhood*, *91*(3), 265-269. DOI:10.1136/adc.2004.066696

The death of a child is a sentinel event in a community, and a defining marker of a society's policies of safety and health. Child death as a result of abuse and neglect is a tragic outcome that occurs in all nations of the world. The true incidence of fatal child abuse and neglect is unknown. The most accurate incidence data of such deaths have been obtained from countries where multi-agency death review teams analyse the causes of child fatalities, as is done in the United States and Australia.

King, W. K., Kiesel, E. L., & Simon, H. K. (2006). Child abuse fatalities: Are we missing opportunities for intervention?. *Pediatric Emergency Care*, *22*(4), 211-214. DOI:10.1097/01.pec.0000208180.94166.dd

Child abuse is a leading cause of childhood morbidity and mortality and often goes unrecognized until severe injury or death has occurred. This study describes a cohort of fatally abused children and explores contacts with the health care community, which may represent missed opportunities for recognition and intervention. Homicide deaths in children younger than 10 years were identified through medical examiners' records from a 4-county area from 1999 to 2002. Medical records from the 3 area children's hospitals were searched for health care visits by the subjects before death. Subject demographics, cause of death, injury patterns, person supervising the child, and recent contacts with the health care community were collected from medical examiner and hospital records. Forty-four cases were identified, with 37 subjects (84%) younger than 4 years. Further analysis focused on these 37 younger subjects. Causes of death were blunt head injury, 57%; blunt torso injury, 13%; gunshot wound, 11%; fire, 8%; drowning, 8%; and poisoning, 3%. Fractures were noted in 9 children (24%), 7 children with fractures at different stages of healing. Eleven children (30%) had documented health care visits for reasons other than routine well-child care in the year before their death, including 7 children (19%) with such visits within a month before their death. Child homicides in this cohort occurred primarily in younger children, among whom the most common cause of death was blunt trauma. Almost 20% of this subgroup had documented contact with the health care community for reasons other than routine care within a month before their death. Some of these presentations are suspicious for undiagnosed abusive injuries, which, if properly identified, could serve as opportunities for life-saving intervention.

Reading, R. (2006). Child deaths resulting from inflicted injuries: Household risk factors and perpetrator characteristics. *Child: Care, Health & Development*, *32*(2), 253-256. DOI:10.1111/j.1365-2214.2006.00614_4.x

Objective To determine the role of household composition as an independent risk factor for fatal inflicted injuries among young children and describe perpetrator characteristics. Design, setting and population A population-based, case–control study of all children <5 years of age who died in Missouri between 1 January, 1992, and 31 December, 1999. Missouri Child Fatality Review Program data were analysed. Cases all involved children with injuries inflicted by a parent or caregiver. Two age-matched controls per case child were selected randomly from children who died of natural causes. Main outcome measure Inflicted-injury death. Household composition of case and control children was compared by using multivariate logistic regression. We hypothesized that children residing in households with adults unrelated to them are at higher risk of inflicted-injury death than children residing in households with two biological parents. Results We identified 149 inflicted-injury deaths in our population during the 8-year study period. Children residing in households with unrelated adults were nearly 50 times as likely to die of inflicted injuries than children residing with two biological parents (adjusted odds ratio: 47.6; 95% confidence interval: 10.4–218). Children in households with a single parent and no other adults in residence had no increased risk of inflicted-injury death (adjusted odds ratio: 0.9; 95% confidence interval: 0.6–1.9). Perpetrators were identified in 132 (88.6%) of the cases. The majority of known perpetrators were male (71.2%), and most were the child's father (34.9%) or the boyfriend of the child's mother (24.2%). In households with unrelated adults, most perpetrators (83.9%) were the unrelated adult household member, and only two (6.5%) perpetrators were the biological parent of the child. Conclusions Young children who reside in households with unrelated adults are at exceptionally high risk for inflicted-injury death. Most perpetrators are male, and most are residents of the decedent child's household at the time of injury.

Schnitzer, P. G., & Ewigman, B. G. (2005). Child deaths resulting from inflicted injuries: Household risk factors and perpetrator characteristics. *Pediatrics*, *116*(5), e687-e693. DOI:10.1542/peds.2005-0296

Objective. To determine the role of household composition as an independent risk factor for fatal inflicted injuries among young children and describe perpetrator characteristics. A population-based, case-control study of all children <5 years of age who died in Missouri between January 1, 1992, and December 31, 1999. Missouri Child Fatality Review Program data were analyzed. Cases all involved children with injuries inflicted by a parent or caregiver. Two age-matched controls per case child were selected randomly from children who died of natural causes. Household composition of case and control children was compared by using multivariate logistic regression. We hypothesized that children residing in households with adults unrelated to them are at higher risk of inflicted-injury death than children residing in households with 2 biological parents. We identified 149 inflicted-injury deaths in our population during the 8-year study period. Children residing in households with unrelated adults were nearly 50 times as likely to die of inflicted injuries than children residing with 2 biological parents (adjusted odds ratio: 47.6; 95% confidence interval: 10.4–218). Children in households with a single parent and no other adults in residence had no increased risk of inflicted-injury death (adjusted odds ratio: 0.9; 95% confidence interval: 0.6–1.9). Perpetrators were identified in 132 (88.6%) of the cases. The majority of known perpetrators were male (71.2%), and most were the child's father (34.9%) or the boyfriend of the child's mother (24.2%). In households with unrelated adults, most perpetrators (83.9%) were the unrelated adult household member, and only 2 (6.5%) perpetrators were the biological parent of the child. Young children who reside in households with unrelated adults are at exceptionally high risk for inflicted-injury death. Most perpetrators are male, and most are residents of the decedent child's household at the time of injury.

Griffin, L. (2004). *"Which one of you did it?": Criminal liability for "causing or allowing" the death of a child*. Pace Law Faculty Publications.

This article analyzes how current U.S. criminal law addresses the problem of securing a homicide conviction where multiple defendants are accused in a child's non-accidental death. Part III sets forth the English response: a statute that includes (1) a new substantive crime; (2) a permissible negative inference against a defendant who fails to account for the non-accidental death of a child for whom he or she is responsible; and (3) delay of a motion to dismiss for failure to establish a prima facie case until after the defense has been presented or the jury has been allowed to draw the negative inference. The English response in light of U.S. law is analyzed, and its efficacy in meeting the prosecutor's evidentiary problems is evaluated. The article concludes that the English response should be adopted here, despite the controversial proposal that the jury in such a case be allowed to draw a negative inference against a defendant who bears responsibility for a child, who fails to account for that child's non-accidental death.

Webster, R. A., Schnitzer, P. G., Jenny, C., Ewigman, B. G., & Alario, A. J. (2003). Child death review: The state of the nation. *American Journal of Preventive Medicine*, *25*(1), 58-64. DOI:10.1016/S0749-3797(03)00091-6

Child death review (CDR) is a mechanism to more accurately describe the causes and circumstances of death among children. The number of states performing CDR has more than doubled since 1992, but little is known about the characteristics of these programs. The purpose of this study was to describe the current status of CDR in the United States and to document variability in program purpose, scope, organization, and process. Investigators administered a written survey to CDR program representatives from 50 states and the District of Columbia (DC), followed by a telephone interview. All 50 states and DC participated; 48 states and DC have an active CDR program. A total of 94% of programs agreed that identifying the cause of and preventing future deaths are important purposes of CDR. Assistance with child maltreatment prosecution was cited as

an important purpose by only 13 states (27%). Twenty-two states (45%) review deaths from all causes, while six states (12%) review only deaths due to child maltreatment. CDR legislation exists in 33 states. Fifty-three percent of the CDR programs were implemented since 1996, and 59% report no or inadequate funding. CDR contributes to the death investigation process in seven states (14%), but the majority (59%) of reviews are retrospective, occurring months to years after the child's death. CDR programs in the United States share commonalities in purpose and scope. Without national leadership, however, the wide variation in organization and process threatens to limit CDR effectiveness.

Bourget, D. D., & Gagne, P. D. (2002). Maternal filicide in Quebec. *Journal of the American Academy of Psychiatry & the Law*, *30*(3), 345-351.

This was a retrospective clinical study based on the examination of coroners' files from Quebec for January 1991 through May 1998. From these files researchers identified 34 cases of victims who were killed by their mothers. Most victims were less than 6 years of age, and there were several cases of the murders of multiple siblings. Of the 34 victims, 19 (55.9 percent) were male, and 15 (44.1 percent) were female. They ranged in age from approximately 4 weeks of age to 13 years. There were 27 mothers in the sample of perpetrators, and 15 of these women committed suicide after the filicide. The majority of perpetrators were white and of Canadian birth. A psychiatric motive was determined for the actions of 23 of the 27 mothers. Eighteen mothers had a diagnosis of schizophrenia or other psychosis. There were no diagnoses of substance abuse or paraphilia. Almost half of the mothers had previous contact with others regarding their problems, including medical or psychiatric staff. Most offenses occurred in the family home, and the most common method of killing the children was carbon monoxide poisoning, followed by use of a firearm. Based on data from this study, the authors developed a revised classification system that takes into account several characteristics of filicide and associated circumstances. It is flexible and standardized to allow the extraction of subpopulations for

research and identification of biological and genetic markers. The authors advise that this attempt to reclassify filicide must be viewed in the context of new research in genetics and identification of genes, as well as the involvement of serotonergic systems in suicide and aggression. This calls for the development of a classification system that would allow for the identification of subgroups with similarities of clinical factors and behavior. The proposed classification instrument must be further standardized to increase its value to researchers and clinicians.

Chance, T., & Scannapieco, M. (2002). Ecological correlates of child maltreatment: Similarities and differences between child fatality and nonfatality cases. *Child and Adolescent Social Work Journal*, *19*(2), 139-161. DOI:10.1023/A:1014598423396

The rate of fatal child maltreatment is increasing, and differentiating between risk factors for fatal as opposed to nonfatal maltreatment is essential to developing prevention programs. This exploratory retrospective study utilizes case record analysis to examine four categories of correlates for child maltreatment: 1) parent/caregiver factors, 2) child factors, 3) environmental/situational factors, and 4) maltreatment incident factors. Thirty-eight fatality cases are compared to a matched group of nonfatality cases to determine which factors are related to fatality in a large Southwestern metropolitan area. The results provide a profile of characteristics that may place a child at higher risk of fatal maltreatment.

Stiffman, M. N., Schnitzer, P. G., Adam, P., Kruse, R. L., & Ewigman, B. G. (2002). Household composition and risk of fatal child maltreatment. *Pediatrics*, *109*(4), 615-621. DOI:10.1542/peds.109.4.615

Approximately 2000 children die annually in the United States from maltreatment. Although maternal and child risk factors for child abuse have been identified, the role of household composition has not been well-established. Our objective was to evaluate

household composition as a risk factor for fatal child maltreatment. Population-based, case-control study using data from the Missouri Child Fatality Review Panel system, 1992–1994. Households were categorized based on adult residents' relationship to the deceased child. Cases were all maltreatment injury deaths among children <5 years old. Controls were randomly selected from natural-cause deaths during the same period and frequency-matched to cases on age. The main outcome measure was maltreatment death. Children residing in households with adults unrelated to them were 8 times more likely to die of maltreatment than children in households with 2 biological parents (adjusted odds ratio [aOR]: 8.8; 95% confidence interval [CI]: 3.6–21.5). Risk of maltreatment death also was elevated for children residing with step, foster, or adoptive parents (aOR: 4.7; 95% CI: 1.6–12.0), and in households with other adult relatives present (aOR: 2.2; 95% CI: 1.1–4.5). Risk of maltreatment death was not increased for children living with only 1 biological parent (aOR: 1.1; 95% CI: 0.8–2.0). Children living in households with 1 or more male adults that are not related to them are at increased risk for maltreatment injury death. This risk is not elevated for children living with a single parent, as long as no other adults live in the home.

Berkowitz, C. D. (2001). Fatal child neglect. *Advances in Pediatrics*, *48*(1), 331-361. DOI:10.1016/S0065-3101(23)00082-8

Child neglect results from either acts of omission or of commission. Fatalities from neglect account for 30% to 40% of deaths caused by child maltreatment. Deaths may occur from failure to provide the basic needs of infancy such as food or medical care. Medical care may also be withheld because of parental religious beliefs. Inadequate supervision may contribute to a child's injury or death through adverse events involving drowning, fires, and firearms. Recognizing the factors contributing to a child's death is facilitated by the action of multidisciplinary child death review teams. As with other forms of child maltreatment, prevention and early intervention strategies are needed to minimize the risk of injury and death to children.

Case, M. E., Graham, M. A., Handy, T. C., Jentzen, J. M., Monteleone, J. A., & National Association of Medical Examiners Ad Hoc Committee on Shaken Baby Syndrome. (2001). Position paper on fatal abusive head injuries in infants and young children. *The American Journal of Forensic Medicine and Pathology*, *22*(2), 112-122.

This article represents the work of the National Association of Medical Examiners Ad Hoc Committee on shaken baby syndrome. Abusive head injuries include injuries caused by shaking as well as impact to the head, either by directly striking the head or by causing the head to strike another object or surface. Because of anatomic and developmental differences in the brain and skull of the young child, the mechanisms and types of injuries that affect the head differ from those that affect the older child or adult. The mechanism of injury produced by inflicted head injuries in these children is most often rotational movement of the brain within the cranial cavity. Rotational movement of the brain damages the nervous system by creating shearing forces, which cause diffuse axonal injury with disruption of axons and tearing of bridging veins, which causes subdural and subarachnoid hemorrhages, and is very commonly associated with retinal schisis and hemorrhages. Recognition of this mechanism of injury may be helpful in severe acute rotational brain injuries because it facilitates understanding of such clinical features as the decrease in the level of consciousness and respiratory distress seen in these injured children. The pathologic findings of subdural hemorrhage, subarachnoid hemorrhage, and retinal hemorrhages are offered as "markers" to assist in the recognition of the presence of shearing brain injury in young children.

Arieff, A. I., & Kronlund, B. A. (1999). Fatal child abuse by forced water intoxication. *Pediatrics*, *103*(6), 1292-1295. DOI:10.1542/peds.103.6.1292

Although water intoxication leading to brain damage is common in children, fatal child abuse by forced water intoxication is virtually unknown. During the prosecution of the homicide of an abused child by forced water intoxication, we reviewed all similar cases in the United States where the perpetrators were found guilty of homicide. In 3 children

punished by forced water intoxication who died, we evaluated: the types of child abuse, clinical presentation, electrolytes, blood gases, autopsy findings, and the fate of the perpetrators. Three children were forced to drink copious amounts of water (over 6 L). All had seizures, emesis, and coma, presenting to hospitals with hypoxemia (PO_2 = 44 ± 8 mm Hg) and hyponatremia (plasma Na = 112 ± 2 mmol/L). Although all showed evidence of extensive physical abuse, the history of forced water intoxication was not revealed to medical personnel, thus none of the 3 children were treated for their hyponatremia. All 3 patients died and at autopsy had cerebral edema and aspiration pneumonia. The perpetrators of all three deaths by forced water intoxication were eventually tried and convicted. Forced water intoxication is a new generally fatal syndrome of child abuse that occurs in children previously subjected to other types of physical abuse. Patients present with coma, hyponatraemia, and hypoxemia of unknown etiology. If health providers were made aware of the association, the hyponatremia is potentially treatable.

Herman-Giddens, M. E., Brown, G., Verbiest, S., Carlson, P. J., Hooten, E. G., Howell, E., & Butts, J. D. (1999). Underascertainment of child abuse mortality in the United States. *JAMA, 282*(5), 463-467. DOI:10.1001/jama.282.5.463

The objective was to describe the true incidence of fatal child abuse, determine the proportion of child abuse deaths missed by the vital records system, and provide estimates of the extent of abuse homicides in young children.

Liang, B. A., & Macfarlane, W. L. (1999). Murder by omission: Child abuse and the passive parent. *Harvard Journal of Legislation*, *36*, 397.

Overpeck, M. D., Brenner, R. A., Trumble, A. C., Trifiletti, L. B., & Berendes, H. W. (1998). Risk factors for infant homicide in the United States. *New England Journal of Medicine*, *339*(17), 1211-1216. DOI:10.1056/NEJM199810223391706

Background: Homicide is the leading cause of infant deaths due to injury. More than 80 percent of infant homicides are considered to be fatal child abuse. This study assessed the timing of deaths and risk factors for infant homicide. Methods: Using linked birth and death certificates for all births in the U.S. between 1983 and 1991, we identified 2776 homicides occurring during the first year of life. Birth-certificate variables were reviewed in both bivariate and multivariate stratified analyses. Variables potentially predictive of homicide were selected on the basis of increased relative risks among subcategories with adequate numbers for stable estimates. Results: Half the homicides occurred by the fourth month of life. The most important risk factors were a second or subsequent infant born to a mother less than 17 years old (relative risk, 10.9) or 17 to 19 years old (relative risk, 9.3), as compared with a first infant born to a mother 25 years old or older; a maternal age of less than 15 years, as compared with an age of at least 25 years (relative risk, 6.8); no prenatal care as compared with early prenatal care (relative risk, 10.4); and less than 12 years of education among mothers who were at least 17 years old (relative risk, 8.0), as compared with 16 or more years of education. Conclusions: Childbearing at an early age was strongly associated with infant homicide, particularly if the mother had given birth previously. Our findings may have implications for prevention.

Creighton, S. J. (1995). Fatal child abuse—how preventable is it?. *Child Abuse Review, 4*(5), 318-328. DOI:10.1002/car.229

Infant and child homicide rates have remained stable over the last 20 years. They represent the most visible part of the spectrum of fatal child abuse. By contrast, infant mortality and child deaths from accidents and SIDS have all declined. The prevention strategies used to combat these deaths would appear to have been more successful than the protection strategies used against child abuse deaths. International

comparisons of infant homicide rates have shown that measures of family stress, available resources and the cultural variables of low status of women and the culture of violence were all associated with increased infant homicide rates. The paper argues for a change in our culture towards children to prevent fatal child abuse.

Hicks, R. A., & Gaughan, D. C. (1995). Understanding fatal child abuse. *Child Abuse & Neglect*, *19*(7), 855-863. DOI:10.1016/0145-2134(95)00044-9

Medical, social service and coroner reports were reviewed for 14 cases of fatal child abuse and neglect identified at a children's hospital from 1988–1992. Twelve cases involved physical abuse and two neglect. The median age was 6.5 months (range 24 days to 3 years). Six families (43%) had prior protective service involvement; however, four of the referrals involved a sibling. Only two of 12 physical abuse victims had a history of a prior suspicious injury. Clinical and postmortem findings are presented. The cause of death in all physically abused patients was blunt impact head injury; one also had contributing intra-abdominal injuries. Ten cases were ruled due to homicide; 12 have come to legal closure resulting in nine felony convictions. These findings emphasize the role of blunt impact brain injury in fatal child abuse cases. Two findings have significant implications for prevention: (a) the paucity of injuries recognized prior to the fatal event, and (b) among families known to child protection agencies the focus was not the fatally injured child.

Reece, R. M. (1993). Fatal child abuse and sudden infant death syndrome: A critical diagnostic decision. *Pediatrics*, *91*(2), 423-429. DOI:10.1542/peds.91.2.423

Distinguishing between an unexpected infant death due to sudden infant death syndrome (SIDS) and one due to fatal child abuse challenges pediatricians, family physicians, pathologists, and child protection agencies. If child abuse is suspected, the physician must fuffill mandated legal obligations to report the case to the appropriate

authorities. Coroners, medical examiners, and pathologists have the added responsibility of rendering a medicolegal opinion as to the cause and manner of death. Child protection agencies need to ensure that other children in the home are not at risk. Law enforcement personnel and prosecutors need to proceed if the law has been broken. All agree that the state of our knowledge in this area is incomplete and ambiguity exists in some cases. For everyone concerned, it is necessary and desirable, within the limits of our capability, to know the cause and manner of an infant death. This process requires application of current knowledge, a desire to know the reasons for the deaths, the resources necessary to conduct essential procedures, and the sensitivity and wisdom to perform the task without causing distress to innocent family members. The history relevant to this decision is a relatively short one. In the first half of this century, searching for the reasons infants die was the lonely province of a few clinicians, researchers, and pathologists who examined the retrospective traces of infant deaths. Bergman[1] recounts the slow progression of knowledge about sudden unexpected infant death in the pathologists' laboratories and morgues where Werne and Garrow[2] and then Adelson and Kinney[3] proposed etiologies for "crib death" other than suffocation.

Durfee, M. J., & Gellert, G. A. (1992). Origins and clinical relevance of child death review teams. *JAMA, 267*(23), 3172-3175. DOI:10.1001/jama.1992.03480230064029

Interagency child death review teams have emerged in response to the increasing awareness of severe violence against children in the United States. Since 1978, when the first team originated in Los Angeles, Calif, child death review teams have been established across the nation. Approximately 100 million Americans or 40% of the nation's population now live in counties or states served by such teams; most have been formed since 1988. Multiagency child death review involves a systematic, multidisciplinary, and multiagency process to coordinate and integrate data and resources from coroners, law enforcement, courts, child protective services, and health care providers. This article provides an introduction to the unique factors and magnitude of suspicious child deaths,

and to the concept and process of interagency child death review. Future expansion of this process should lead to more effective multiagency case management and prevention of future deaths and serious injuries to children from child abuse and neglect.

Jason, J., & Andereck, N. D. (1983). Fatal child abuse in Georgia: The epidemiology of severe physical child abuse. *Child Abuse & Neglect*, *7*(1), 1-9. DOI:10.1016/0145-2134(83)90023-6

Decisions about the occurrence of child abuse are increasingly difficult to make because concepts of what qualifies as reportable child abuse may be broadening. We examined this question by comparing 51 fatal child abuse cases occurring in Georgia between July 1975 and December 1979 to non-fatal cases and to the Georgia population. Overall rates of fatal child abuse were higher for male perpetrators compared with female and black perpetrators compared with white. However, the latter finding varied with economic and geographic status. The highest child abuse fatality rates were found in poor, rural, white families (3.3/100,000 children) and in poor, urban, black families (2.4/100,000 children). Risk factors for fatal abuse included early childhood (RR 6:1). parental teenage childbearing (RR 4:1). and low socio-economic status. These characteristics were similar to those of the severe child abuse cases noted in the early child abuse literature Non-fatal cases did not clearly share these risk factors. Severe abuse, here represented by fatal cases, is a distinct subset of reported child abuse, but characteristics associated with it are frequently attributed to all reportable child abuse. Medical personnnel should be aware that they cannot rely on the presence or absence of these characteristics in screening for risk of reportable child abuse. Child abuse research should use restricted, stated case definitions. When intervention and prevention programs are being organized, they should not generalize research findings to all forms of child abuse.

Krugman, R. D. (1983). Fatal child abuse: Analysis of 24 cases. *Pediatrician*, *12*(1), 68-72.

Analysis of 24 cases of fatal child abuse reveals that multi-disciplinary review can assist in the determination of whether fatal injury was accidental or non-accidental. All cases had both a 'discrepant history' and some 'delay' in seeking care. The predisposing child factor was inconsolable crying in infants under 12 months, and was associated with a bowel or bladder accident or diaper change in 9 of 12 cases where children were over 1 year of age. Head injury accounted for 17 of the 24 deaths.