

Child Death Review Team Findings: Implications for Health Educators

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Abstract

Child death review teams serve as an important mechanism to ensure accurate classification and reporting of child deaths. There is currently a lack of representation of health educators on these teams that leads to missed opportunities for program planning, development, evaluation, and policy development. This article describes the findings of the Hillsborough County, Florida child death review team for years 1996-1998 and the important roles that health educators can play in prevention efforts.

Introduction

Intentional and unintentional injuries are leading causes of child morbidity and mortality. Annually, there are approximately 6,000 unintentional injury deaths among children under the age of 14 (National Safe Kids Campaign, 1999). There are approximately 1,000 to 5,000 child fatalities per year resulting from child abuse or neglect (National Clearinghouse on Child Abuse and Neglect, 2000). Yet despite the high mortality rates that exist, many of the fatal injuries that children sustain are underreported as a result of misclassifications and poor death investigations (Ewigman, Kivlahan, & Land, 1993).

Fatal injuries are not necessarily being linked to the underlying cause of death. For example, the literature indicates that child maltreatment cases have been misclassified as deaths due to preventable injuries such as drownings and falls (Community on Child Abuse and Neglect & Committee on Community Health Services, 1993). Additionally, child abuse has gone undetected, and documented as an "accident," child homicide, or sudden infant death syndrome (National Clearinghouse on Child Abuse and Neglect, 2000). In some instances the causes of child deaths are overlooked entirely (Community on Child Abuse and Neglect & Committee on Community Health Services; Ewigman et al., 1993).

The potential for misclassification and underreporting raises concerns regarding the accuracy of existing infant and child mortality statistics and, consequently, the ability to predict and prevent child deaths. There exists a need for a uniform system of

investigating, classifying, and reporting infant and child deaths. A systematic and timely process for assessing child fatalities could lead to more appropriate prevention strategies to prevent unnecessary child morbidity and mortality.

Child Death Review Teams

Concerns related to preventable child deaths have prompted interagency review teams to surface nationwide. These child death review teams (CDRTs) often consist of a medical examiner or coroner, law enforcement personnel, public health officials, court personnel, health care providers, and representatives from child welfare and social services (Community on Child Abuse and Neglect & Committee on Community Health Services, 1993; Gellert, Maxwell, Durfee, & Wagner, 1995). The purpose of the team is to convene on an ongoing basis to discuss and review child death cases. Based on a multi-agency approach, information surrounding the fatality is provided and assessed typically in monthly meetings. The primary responsibility of the team is to determine the cause and circumstances surrounding the death (Alexander, 1995). The main objective of the team is to come up with a consensus on the cause of death given all of the information and to accurately record the findings.

Benefits of the Death Review Process

Child death review teams have been called "a gold mine for injury prevention and control" (Onwuachi-Saunders, Forjuoh, West, & Brooks, 1999, p. 276). Effective teams not only provide ongoing systematic reviews of child deaths, but they also help to document important epidemiological data. Additionally, CDRTs are capable of accelerating progress in the

understanding of sudden infant death syndrome (SIDS), missed cases of fatalities resulting from child abuse and neglect, familial genetic diseases, inadequate health care, and other potential public health threats (American Academy of Pediatrics, Community on Child Abuse & Neglect and Committee on Community Health Services, 1999). Finally, CDRTs are in a position to provide data that could initiate policy changes and the development of effective educational programs.

Existing Teams

Currently, there are statewide, county, and/or local child death review teams in almost every state (Alexander, 1994; American Academy of Pediatrics, Community on Child Abuse and Neglect & Committee on Community Health Services, 1999). These teams vary in their level of functioning, membership, case review, and data collection. According to a national survey, there are 17 states that have statewide review teams (Granik, Durfee, & Wells). Some states such as Georgia and Missouri have both local and state review teams (Granik, Durfee, & Wells, 1991). Florida is in the process of developing a statewide CDRT to complement the teams that exist at the local level.

The Hillsborough County CDRT is an example of a local Florida team that is based on interagency collaboration. In terms of demographics, Hillsborough is the fourth largest county in the state (US Bureau of the Census, 1999), with approximately 942,332 residents (Webcoast, 1995). About 83% of the residents are white, 13% are black or African American, and 13% are of Hispanic origin (Webcoast). The Hillsborough County Child Death Review Team (HCCDRT) represents a comprehensive effort to identify the causes and potential risk factors associated with child deaths in an urban area. This multidisciplinary team has been in existence since 1995 and includes members from criminal justice, law enforcement, health and medicine, child welfare, and social services.

Purpose

The purpose of this article is to report the findings of the Hillsborough County CDRT based on data collected from 1996-1998, and to highlight specific ways that health educators can utilize the findings of child death review teams to direct programming efforts.

Procedures

The child death review team convenes on a monthly basis to review all medical examiner cases for those individuals under the age of 18 years. Prior to the meetings, all team members receive a list of deaths to be reviewed. This process allows for agency representatives to collect information on the decedents and their families to be discussed at the meetings. Due to the sensitive nature of the information, all members of the review team are required to sign a confidentiality agreement. Additionally, only one designated team member records the information on a standardized data form.

Results

Between January 1, 1996 and December 31, 1998 the HCCDRT reviewed a total of 233 child deaths. White males accounted for nearly 37% of the deaths, followed by 24% of deaths in white females. Black males represented 22.7% of cases, and black females accounted for 13.7% of the deaths. The remaining deaths (2.5%) included Hispanic, Asian, and children of other ethnicities. The breakdown of gender and ethnicity for all cases is shown in Table 1.

The overall mean age at death was 6.8 years. The mean age at death for males was 7.7 years while the mean age for females was 5.5 years. The majority of deaths (34.8%) occurred in the age group classified as “under one year” followed by 28.8% of deaths in the 15 to 18 year-old-age group. The least number of deaths (7.3%) involved those children in the 5 to 9

Table 1. Children’s Gender and Ethnicity (N=233)

	Male	Female	Total N	% of Total
Black	53	32	85	36.5
White	86	56	142	60.9
Hispanic	1	3	4	1.7
Asian	1	0	1	0.43
Other	0	1	1	0.43
Total N	141	92	233	99.96

*Note: Not all percentages add to 100 due to rounding and the ways data are displayed.

year-old-age group. As shown in Table 2, more deaths occurred during the months of March and April, followed by June, July, August, and December.

The manner of death for the children is shown in Table 3. Overall, 28.3% of the deaths were traffic-related, 18.4% were related to natural causes, 16.3% were linked to unintentional causes, and SIDS accounted for 12.9% of the deaths. Additionally, undetermined causes were cited in 3% of the deaths, and in approximately 5% of the cases the cause of death remained pending. The Hillsborough County medical examiner’s office performed an autopsy in 99.6% of the deaths and documented the cause of death for each case.

Traffic-Related Deaths

Traffic-related deaths include automobile, motorcycle, pedestrian, and bicycle-related crashes. During this study period, 66 children died in traffic-related incidents. Over 57% (N=38) of these deaths involved children in the 15 to 18-year-old age group, with an additional 16.6% (N= 11) of deaths involving children from the ages of 10 to 14 years.

The median age for children dying in traffic crashes was 15 years. The majority of children (36.4%) who died in a traffic crash were passengers in automobiles, followed by approximately 22% of the deaths involving the driver of the vehicle. Nearly 14% of the children who died were pedestrians, and another

Table 2. Children’s Deaths by Month for Years 1996-1998

Month of Death	1996	1997	1998	N	% of Total
January	3	6	4	13	5.6
February	3	12	3	18	7.7
March	10	3	10	23	9.9
April	12	4	7	23	9.9
May	5	5	9	19	8.2
June	2	13	7	22	9.4
July	4	12	6	22	9.4
August	9	7	6	22	9.4
September	5	3	9	17	7.3
October	7	4	6	17	7.3
November	7	3	5	15	6.4
December	7	1	14	22	9.4
Total	74	73	86	233	99.9

12% were killed in bicycle crashes. In addition, three children died in go-cart crashes and two children died while riding as passengers in the bed of a pick-up truck. A review of the circumstances surrounding the deaths revealed that 20 children were not properly restrained in the automobile at the time of the crash, and the restraint status of 12 of the children was unknown. Of the children who were not restrained at the time of the crash, five were ejected from the car upon impact. In addition, none of the children killed while riding bicycles or go-carts were wearing helmets at the time of their crash. Information relating to the deployment of airbags was not available for this study period, however, the HCCDRT began collecting this information in 1999.

These data demonstrate a continuing need for health education programs that stress the importance of wearing seatbelts while in an automobile. The use of helmets while riding in go-carts and on bicycles is also of great importance. Programs that address the dangers of riding in the back of an open pick-up truck are especially important for populations living in rural areas.

Natural Deaths

Natural deaths comprised 18.4% of the deaths. The factors associated with this category include bacterial or viral infections, genetic causes, and systemic involvement of the renal/urinary tract, brain, heart, or lungs. Nearly 54% (23/43) of the natural deaths occurred in children under the age of one.

Health education programs that make parents aware of the need for regular medical care for their children can help reduce deaths from viral and systemic infections. Parents and family members can also benefit from programs that provide information about local support groups for family members of children with terminal illnesses or conditions.

Unintentional Deaths

An unintentional death is described as a death resulting from causes such as electrocution, suffocation, drowning, strangulation, choking, hanging, fire, burns, and other medical emergencies. The unintentional category does not include deaths classified as homicide, suicide, or traffic-related.

Table 3. Manner of Children's Deaths for Years 1996-1998

Manner of Death	N	Percent of Total
Natural	43	18.4
Unintentional	38	16.3
Homicide	18	7.7
Suicide	12	5.2
Traffic Accident ^a	66	28.3
SIDS	30	12.9
Fetal Death	7	3.0
Undetermined	7	3.0
Pending	12	5.2
Total	233	100.0

^aThe term accident is used since it appears on the HCCDRT form. However, it should be noted that many injuries are not random, uncontrollable acts but preventable and predictable (Committee on Injury and Poison Prevention-American Academy of Pediatrics, 1997). Traffic accidents are not included in the unintentional manner of death category.

Nearly 79% (30/38) of the unintentional child deaths involved children between the ages of one and nine years. The most common causes of death in this category were drowning and residential fires.

Approximately 45% (N=17) of the children who died of unintentional causes were drowning victims. Over 82% of the drowning deaths occurred during the months of May through August, with the majority (N=5) occurring during June. The median age for the drowning victims was 3 years.

The majority (N=9) of the drowning victims drowned in bodies of water such as creeks, lakes, retention ponds, and in Tampa Bay. Thirty-five percent (N=6) of the children drowned in swimming pools, and two children drowned while bathing. Information relating to the type of pool fencing, as well as safety equipment that might have been available to bystanders was not available. The data indicate that five of the swimming pools were fenced, however, the type of pool fencing and the state of repair were not known.

It is important for health education programs to stress the need for layers of protection between a child and a swimming pool. Four-sided pool barrier fencing which separates the pool from the house and the yard is an effective drowning intervention when used in conjunction with adult supervision and locks that are in working order. The gates to the barrier fence should close automatically and lock in order to ensure the safety of children around the pool. Swimming pool barrier fences that are kept in working order function effectively to keep children away from the pool should they happen to wander away from their caregivers. Education efforts could also focus on reminding parents to be observant of retention ponds that have fencing that is in disarray or absent altogether. Supervision of children around all bodies of water (including bathtubs) is a primary prevention measure.

Nearly 24% (N= 9) of the unintentional deaths resulted from residential fires. The median age for children dying in residential fires was 4 years. Detailed information relating to the presence of operating smoke

alarms in the homes was not available. The presence of an operating smoke alarm in the home was noted on only one data form. Health education efforts focusing on educating parents to own smoke alarms as well as to regularly change the batteries can help prevent burn-related deaths in children.

Sudden Infant Death Syndrome (SIDS)

SIDS, also known as crib death, is the sudden and unexplained death of an infant under the age of one year. It is estimated that each year in the United States approximately 5,000 infants die from SIDS (National Institute of Child Health and Human Development, 1999).

Approximately 13% (N=30) of the deaths resulted from SIDS. The sleeping position of the infant was described in 24 of the deaths. The most common sleeping position was on the abdomen (41.7%), followed by placement on the back (33.3%), and on the side (25.0%). A description of the sleeping arrangement of the child was available in 28 of the SIDS cases. Fifty-seven percent of the infants were sleeping alone at the time of death, and the remaining 43% were sleeping with either an adult or another child, or with both an adult and a child.

While physicians do not know what causes SIDS, there are ways for parents to reduce their child's risk. Recommendations from the American Academy of Pediatrics include: (1) placing infants on their back to sleep, (2) making certain that the infant's bedding is firm, (3) not placing pillows or stuffed animals in the crib with the infant, (4) maintaining a comfortable temperature in the infant's room, (5) creating a smoke-free zone around the infant, and (6) whenever possible, breastfeeding the infant. It is also important for children to receive their immunizations on schedule (Back to Sleep Campaign, 1998).

Information on all of these topics can be given to parents during prenatal classes or upon discharge from the hospital or birthing center. Recently, in an effort to increase education efforts, the NICHD Back to Sleep Campaign partnered with Pampers to increase SIDS education efforts, focusing on the parents and caregivers of infants. These efforts include printing the Back to Sleep logo on the fastening strips of newborn diapers, as well as featuring the 800 Campaign number on the newborn diaper package. It is estimated that since Pampers is the leading diaper used in hospitals, the Back to Sleep logo and the 800 Campaign telephone number printed on the diapers will reach 2.5 million mothers annually (NICHD, 1999).

Suicide

The medical examiner indicated suicide as the manner of death in approximately 5% (N=12) of the deaths. Methods of suicide included the use of a gun (n=3), medication (n=1), hanging (n = 5), and other (n=3). The ages of the children committing suicide ranged from 10 to 18 years. The mode age was 17 years with a median age of 15 years. The majority of suicides involved males (N=10) and it appears that most of the suicides were in response to a life crisis. Approximately 67% of the children had previously spoken to someone concerning suicide. Most often the child had spoken to his/her mother, followed by the father and a sibling.

Health education efforts that offer parents ways to recognize signs of depression or serious life-crisis situations may help to prevent suicide attempts among adolescents. Parents, caretakers, and teachers should be encouraged to take all threats and discussions of suicide seriously and sources of support and treatment should be provided through schools and the community.

Homicide-Related

Nearly 8% (N=18) of the deaths in this sample were homicide-related. Approximately 61% of these deaths involved children in the 15 to 18 year-old age group. The median age for this category of deaths was 15 years. Children in the 0 to 4-year-old-age group were homicide victims in 33.3% of the deaths. Thirty-nine percent (N=7) of the homicide deaths involved the use of a gun. In two of the deaths the gun was available to the children in either the home of the victim or the perpetrator. The majority of all the homicide victims (61%) knew their attacker. Charges were filed in approximately 41% of the homicides. One of the deaths was believed to be gang-related.

Health education programs that stress the need to keep guns away from children, as well as those that teach adolescent conflict-resolution skills are useful interventions. Other intervention efforts may include offering parents and adolescents information concerning local gang activity.

Discussion

The majority (60.5%) of child deaths occurring in Hillsborough County, Florida involved male children. The overall mean age at death for males was 7.7 years and for females it was 5.5 years. The majority of deaths (34.8%) occurred in the "under one year" age group. The 15 to 18 year-old-age group followed with 28.8% of the deaths. The results of this study are consistent with findings that indicate unintentional injuries are a leading cause of child mortality

(Friedrich, 1999). Approximately 28% of the deaths were traffic-related, and 16.3% of the deaths were due to unintentional causes. In addition, nearly 13% of the deaths occurred due to SIDS, and another 7.7% were due to homicide. These four categories of death-traffic-related, homicide, unintentional, and SIDS deaths represent the majority (65.2%) of the non-natural deaths in our sample.

It is very important that health educators become part of child death review teams. While presently the teams are largely composed of those individuals who are professionally trained in medicine, psychology, the legal system, and social services, there is a true void in terms of health education professionals. Health educators can assist review teams by conducting thorough reviews of literature, using appropriate qualitative and quantitative research method to analyze data, and applying the research to health education practice (National Commission for Health Education Credentialing, the American Association for Health Education, & the Society for Public Health Education, 1999). Based on the data analysis, health educators can successfully plan, implement, and evaluate targeted intervention programs. One appropriate setting for dissemination of such information would be the schools. Students should be educated about the causes of child deaths and risk-taking behaviors should be addressed. The availability of injury prevention programs in the community will help reinforce what is learned in school in addition to reaching adults. This can be accomplished by health educators integrating efforts with community coalitions and injury/SIDS prevention groups such as the local health department's injury prevention programs, parenting groups, violence/suicide prevention groups, Safe Kids, Mothers Against Drunk Driving, traffic safety groups, and brain injury coalitions.

Health educators are also in an appropriate position to help shape public policy and public opinion about the causes of children's deaths in a geographic area. They can be part of policy analysis activities and advocate for administrative, regulatory, or legislative changes that will decrease the likelihood of children being injured or killed (National Commission for Health Education Credentialing, et al., 1999).

Based on the data presented in this manuscript, health educators could be part of several education/outreach efforts directed toward the prevention of child morbidity and mortality. Specific attention should be given to traffic-related, unintentional, SIDS, and intentional injuries. Also, it

appears that the teenage population is at particular risk, creating a need for programs that can counter teenager's potential resistance and feelings of immortality. Social marketing programs may be effective in reaching this population.

In addition, advocacy efforts that lead to strengthening or passing legislation or policies related to injury prevention are important. For example, health educators were involved in the passage of Florida's 1997 bicycle helmet law and the legislation that now requires safety features to be used with all new residential swimming pools. With the expertise of health educators, child death review teams will not only be able to determine causes of children's deaths but serve as a vehicle for the prevention of children's deaths through successful programmatic and policy efforts.

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