## Child Death Review Teams in Action

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lowed in death investigations of children under two. The guidelines will include use of radiologic evaluation, toxicologic testing, death scene evaluation, and immediate review of the case with one of the regional coroners. Plans to locate the autopsies in regional centers have been discussed. Following a preliminary investigation, all cases will be reviewed by the PRC. These steps should further centralize the response and greatly improve the investigation of childhood fatalities in Ontario.

### New South Wales, Australia

A National Child Protection Council has been established in recent years to provide a national clearinghouse for information and research in child abuse-related deaths in Australia. The Council's main focus is on primary and secondary prevention strategies, but it may have a role in coordinating national data on child abuse deaths.

***Despite their differences in scope or operation, child death review teams seek to improve the investigation and disposition of possible child abuse-related fatalities through a standard review process.***

Like the U.S., Australia has no uniform, nationwide system to collect data on child abuse-related deaths. The Australian Institute of Criminology is actively establishing a system to assess the extent of the problem. One valuable source of child death data is the National Injury Surveillance Unit, which collects national injury data and focuses on injury prevention. Success has already been demonstrated in areas of prevention, such as increases in the use of seat belts and bicycle helmets and improved playground safety measures.

A Child Death Review Committee was established in late 1993 in New South Wales (NSW), one of Australia's provinces. The goal of the Committee is to identify information related to child abuse-related deaths that might prove helpful in preventing future deaths. The Committee will also establish a database in order to begin defining the extent of the problem at the state and national levels in Australia.

The NSW Committee will review deaths in cases of children 14 years old and under. The categories of child deaths for Committee review include (1) all known deaths attributable to physical abuse, neglect, or failure to thrive; (2) bathtub drownings; and (3) suspicious deaths where no clear explanation is forthcoming from caretakers. After the Committee has developed its review process, additional categories may be included, such as (1) SIDS deaths in children over seven months of age; (2) poisoning deaths; (3) asphyxia deaths; (4) suicides; and (5) homicides. In order to establish a more comprehensive database, the Committee began its review by conducting a retrospective review of child deaths that occurred in 1989. The Committee is working toward the goal of reviewing cases within one month of a child's death.

### Conclusion

In summary, despite their differences in scope or operation, child death review teams seek to improve the investigation and disposition of possible child abuse-related fatalities through a standard review process. The long-term goal of developing effective primary prevention programs to reduce the incidence of child abuse-related deaths can be enhanced by the establishment of a standardized review process in each state, increased interdisciplinary education and collaboration, and the implementation of state and national data collection systems.

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## FIREARMS: A CULTURE OF VIOLENCE


—by Elizabeth C. Powell and Katherine K. Christoffel


Children are being killed at alarming rates. In 1993 in the Chicago area, 61 children under the age of 15 were slain. Half were younger than four years old; they were most often victims of child abuse. The single most common cause of death was from gunshot injuries (30 of 61 victims). Other causes included beating, burns, strangling, and drowning (Chicago Tribune, 1994).

Clinicians and researchers involved with child abuse should be concerned not only about the infant homicide peak due to child abuse, but also about the adolescent homicide peak due to firearms. Members of many of the same families are at risk; survivors of child abuse still face the danger of firearms before they can achieve a long life.

### Epidemiology

**Deaths.** In the United States, firearms are the eighth leading cause of death; they are the second leading cause of death due to traumatic injury. Between 1988 and 1991, the death rate associated with firearms increased 9%, and in 1991 in the states of California, New York, Texas, Maryland, Louisiana, Nevada, and Virginia, and in the District of Columbia, firearm deaths exceeded motor-vehicle related deaths (Fingerhut et al., 1994).

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# Firearms: A Culture of Violence

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The risk to women—and so to mothers—is of particular concern to child abuse prevention and treatment experts. Women are homicide victims much less often than men. However, among women 15 to 24 years old, the homicide rate (6.3 per 100,000) is second only to that of unintentional injury (20.8 per 100,000) as a cause of death (U.S. Department of Commerce, 1993). Among females 15 to 19 years old, the homicide rate is much higher for black females (10.4 per 100,000) than it is for white females (2.0 per 100,000). Black adolescent females have higher rates as victims of homicide than white males (10.4 vs. 9.7 per 100,000) (U.S. Department of Commerce, 1993). Twice as many women are killed by spouses or other intimates than are killed by strangers (Reiss and Roth, 1993). They are killed as a result of anger, fear, or both. The use of lethal weapons, rather than the intent to kill, may dictate the outcome of these confrontations.

***Clinicians and researchers involved with child abuse should be concerned not only about the infant homicide peak due to child abuse, but also about the adolescent homicide peak due to firearms.***

Children and their futures are our primary concerns. The risk of firearm death occurs later than the risk of fatal child abuse. For children and adolescents (ages birth through 19 years), 80% of firearm deaths affect victims older than 14. Firearms are second only to motor vehicles as a leading cause of death for those 15 to 19 years old (Federal Bureau of Investigation, 1988). In addition, the teen suicide rate has doubled since 1970, an increase resulting in part from access to firearms (Fingerhut et al., 1991).

***Children and their futures are our primary concerns. The risk of firearm death occurs later than the risk of fatal child abuse.***

**Injuries and Costs.** Information about nonfatal firearm injury incidence is still quite limited. While U.S. society takes care to count the bodies, it does not yet obtain accurate counts of nonfatal violent injuries. One estimate is that for all ages, there are about 5.7 nonfatal injuries for each firearm death (Cook, 1991).

The estimated annual hospital costs for treating firearm injuries is $1 billion, and the estimated total annual cost to the U.S. economy, including medical and mental health treatment, emergency response, and productivity losses from firearm injuries is $14 billion (Rice et al., 1989). More than 80% of this burden is financed by taxpayers (Chicago Tribune, 1993). These costs divert finite resources from other critical health needs.

### Firearms in the Environments of Children

Firearm types include handguns and long guns (rifles and shotguns). Long guns are owned in greater numbers than handguns, but account for a small fraction of gun-related injuries. Handguns are portable and easily concealed, and cause most firearm injuries. Semi-automatic weapons have large bullet chambers and are able to deliver a succession of up to 17 bullets as fast as the trigger can be pulled. Although it is not yet clear what fraction of handgun injuries are caused by semi-automatic weapons, it is clear that semi-automatic weapons are used in urban gang shootings in the 1990s (Hutson et al., 1994). Automatic weapons, which continue to fire as long as the trigger is held down, are banned in the U.S.

An estimated 67 million handguns are owned by private citizens in the U.S. Recent corporate marketing strategies have been directed at women (Gibbs, 1993). Most guns acquired from licensed dealers are purchased legally; it is impossible to know the number of handguns that changed hands in private transactions or via theft. Among teenage boys, the two most common sources for guns were "off the street" (54%) and "borrow from a family member or friend" (45%) (Sheley and Wright, 1993).

To many, gun possession confers social status and a feeling of protection in the home. However, with respect to firearm-related deaths in the home, data indicate that suicides, criminal homicides, and unintentional deaths of family members far outnumber deaths attributable to self defense. Most of this risk is due to handguns (Kellerman and Reay, 1986). Ninety percent of unintentional shootings of younger children occur in the home and involve an accessible handgun (Smith and Lautman, 1990). The availability of guns in the home also increases the risk of suicide among adults and adolescents; handguns are the usual weapon involved (Kellerman et al., 1992; Brent et al., 1988).

### Causes of violent death and injuries

The National Academy of Sciences as has defined violence as "behaviors by individuals that intentionally threaten, attempt, or inflict physical harm on others" (Reiss and Roth, 1993). Weapons used in violent exchanges include guns, knives, and fists. Guns are the most lethal of these weapons, and gunshot wounds are estimated to be more fatal than knife injuries by a factor of 2-5:1 (Cook, 1991).

Many factors contribute to violent interactions. Poverty, the most important correlate of homicide risk, promotes anger and hopelessness. Males, African-Americans, and urban dwellers are at higher risk for homicide as well. Unemployment, early school failure, and low educational attainment are also correlated with violence.

Community characteristics appear to augment poverty to create areas with high rates of violence. Family disintegration, the decreased capability of the community to supervise young males, and illegal markets in guns and drugs also contribute to violence. As illegal markets in guns and drugs grow, disputes among those who control these markets often end in violence.

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Adolescents, like adults, own or carry handguns because of a perceived need for protection. Although it is illegal for vendors to sell handguns to minors, handguns are readily available to adolescents (Sheley and Wright, 1993). As a result, adolescents carry firearms on neighborhood streets and to their schools. One report indicates that more than 100,000 students take guns to school in a year (The Wall Street Journal, 1993). In the 1989-90 school year in Illinois, 5% of the students in one survey had carried a gun to school at least once (Schultz, 1993). Studies involving national samples have confirmed this figure (Harris, 1993; Division of Injury Control, 1991). Violent behaviors are learned from family role models, among peers, or from others in the neighborhood (Reiss and Roth, 1993). Adolescents may use guns to express anger, threaten others, or seek revenge. Violence peaks in adolescence and early adult life, in part because adolescents are impulsive, may be impaired from drug and alcohol use, and are subject to peer pressure and gang rules. Half of the homicides among youths in some areas were attributed to gang membership, which correlates with family breakdown, poverty, and lack of education (Hutson et al., 1994).

***Violence peaks in adolescence and early adult life, in part because adolescents are impulsive, may be impaired from drug and alcohol use, and are subject to peer pressure and gang rules.***

### Prevention Approaches

The current epidemic of gun deaths is now recognized by U.S. citizens and public officials. Consequently, gun violence is beginning to be identified and addressed as a public health problem. Public health interventions place the value of the common good of the community above that of any one individual, and use all effective means to benefit a population. Public strategies seek to reduce gun death and injury.

Numerous laws at the federal, state, and local levels address the sale, distribution, and use of firearms in the U.S. Nevertheless, firearm homicides have steadily increased. One reason for this increase is that most of the laws act late in the "life" of a gun and affect its use, as opposed to acting early, at the point of manufacture, importation, or sale.

The recent national debate on handguns has focused on registration and waiting periods before purchasing guns. The Brady Bill (1993) introduced background checks and waiting periods; its intent is to reduce the probability that a high risk person (i.e., a criminal or someone who is mentally ill) will acquire access to a firearm. However, available information (although limited) suggests that most alleged shooters are neither known felons nor adjudicated mentally ill. Although some have acquired their guns via illegal means, most have made legal firearm purchases or have gained access to a legally purchased gun (via borrowing, private purchase, or theft) (Reiss and Roth, 1993). The impact of new legislation on homicide rates must be studied.

There is reason to expect that fewer handgun deaths and injuries will occur if fewer handguns are available. For example, in 1987 in Britain there were three handgun murders; in Australia, there were eleven. Both countries have strict laws that severely limit the availability of handguns (Fingerhut and Kleinman, 1990). In the U.S., homicides and suicides in the District of Columbia declined after possession, transfer, sale, and purchase of handguns were banned; mortality attributable to other weapons did not increase (Loftin et al., 1991). A comparison between Vancouver (where firearms are more restricted) and Seattle showed the probability of being murdered with a handgun was five times higher in Seattle. Because homicide rates with other weapons were similar in the two areas, these data suggest that handgun restriction might lower the Seattle homicide rate (Sloan et al., 1988).

### Future directions

The HELP (Handgun Epidemic Lowering Plan) Network of Concerned Professionals was established in 1993 to raise awareness and to find solutions to eliminate handgun violence. In 1992, the American Academy of Pediatrics called for a ban on handguns, and in 1994 it released, with the Center to Prevent Handgun Violence, materials that clinicians can use to counsel families about the dangers of firearms (particularly handguns) in the home (Committee on Injury and Poison Prevention, 1992; STOP, 1994). Physicians and other child advocates can urge lawmakers on local, state, and national levels to support gun legislation, and can make families aware of the dangers of handguns in the home so that they can protect their children.

Reducing access to handguns will not solve the social problems of urban America, nor can it be expected to reduce all types of violence, but it should reduce the lethality of violence and thus the probability that children and adults caught in violence will be killed.

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# SUDDEN INFANT DEATH SYNDROME

—by Robert M. Reece

Profound emotions are aroused when an infant dies. When an infant who was previously healthy and apparently normal dies unexpectedly and suddenly, the resulting anguish sweeps over a family in a tidal wave of grief, helplessness, doubt, suspicion, guilt, and anger. The inevitable and invariable question asked is, "Why did my baby die?" Answers are ambiguous, speculative, and shrouded in our ignorance as to the etiology of this age-old condition known variously as crib death, cot death, and sudden infant death. In this country and increasingly around the world, this phenomenon is becoming known as sudden infant death syndrome, or SIDS.

***The inevitable and invariable question asked is, "Why did my baby die?" Answers are ambiguous, speculative, and shrouded in our ignorance as to the etiology of this age-old condition.***

The sudden death of an infant is the most devastating of life events for young parents who, along with other family members and friends, have expectations, hopes, and dreams for the infant and his future. The typical scenario involves a previously apparently healthy infant who is put to bed after having been fed his usual diet of formula or breast milk. The child's parents, on retiring, look in on the baby and find him to be fine. In the morning, one of the parents goes to the baby's bed to get him up for a feeding and finds the baby immobile, unresponsive, often mottled in color, sometimes rigid and cold. In panic, the parent attempts to resuscitate the baby and summons help from the emergency responders in their locale. The rescue squad arrives, attempts resuscitation and then transports the baby to the hospital where the baby is ultimately pronounced dead. In some locales, support groups are available to help the parents through the initial shock and sometimes through long-term grieving. Also, depending on location and jurisdiction, a postmortem examination is conducted to ascertain the cause of death and a review is made of the death scene, medical history, and other factors surrounding the death.

The grieving reaction of parents and other family members runs the gamut from quiet resignation to uncontrolled emotional outbursts of grief, anger, and denial. Many SIDS parents blame themselves initially for doing something, or not doing something, that they feel could have contributed to the death their infant. Using parents' self-blame to raise the suspicion that they were perpetrators of infanticide is unjustified and unfair, since guilt is the norm in the excruciating first hours and days of the realization of the death.

The definition of SIDS, promulgated by the National Institutes of Child Health and Human Development in 1989, is "the sudden death of an infant under one year of age which remains unexplained after the performance of a complete postmortem investigation, including an autopsy, an examination of the scene of death and review of the case history." Another term heard in this field is Sudden Unexpected Death (SUD). This is a generic term describing an event but not suggesting a diagnostic category.

The NIH Consensus Statement on Terminol-

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