

## SECTION THREE: Unintentional Injury Deaths

**Unintentional injuries were responsible for the deaths of 229 Missouri children in 2003, representing 22% of all Missouri incident fatalities.**

Unintentional injuries are the leading killer of children ages 1-17. Each year in the United States, approximately 7,200 children ages 14 and under are killed, and 50,000 are permanently disabled. More children, ages 1-17, die from unintentional injuries than from all childhood diseases combined. Injury is the leading cause of child hospitalization. For every child who dies from a preventable injury, 40 others are hospitalized and 1120 are treated in emergency rooms. (*Children's Safety Network*)

### Motor Vehicle Fatalities

**There were 147 motor vehicle fatalities among Missouri children in 2003, which represents 64% of all unintentional injury deaths.**

**“We use the term ‘crash’ instead of ‘accident’ because we want people to realize that when cars run into each other, or run off the road and hit something or crash into something it is almost always caused by driver error - it is seldom an ‘accident’”**

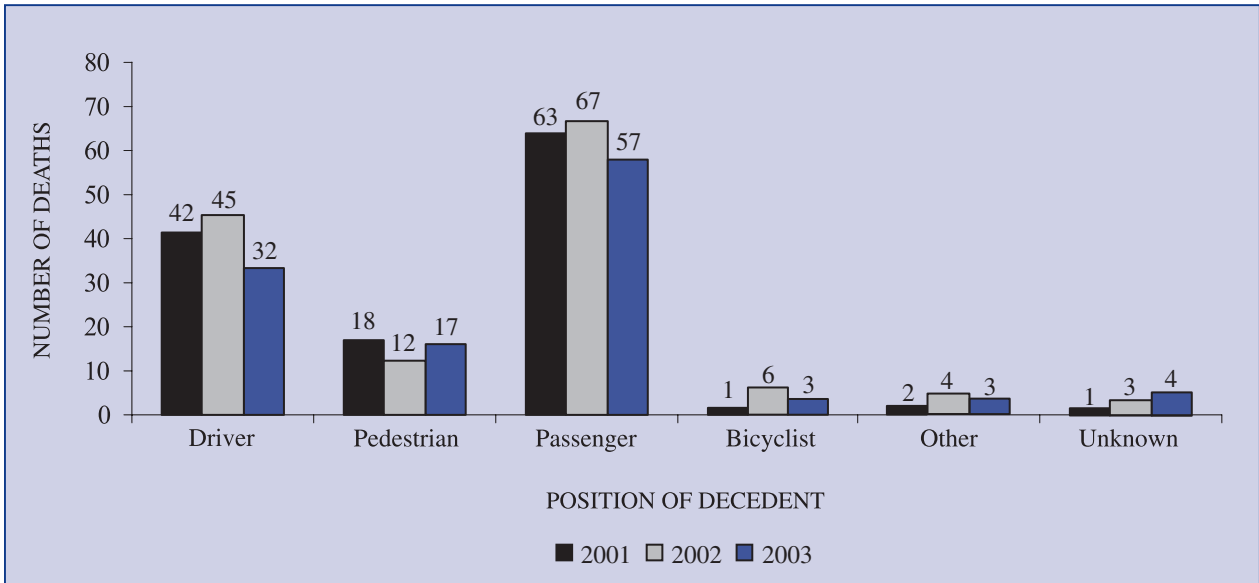
*- Missouri State Highway Patrol*

Motor vehicle crashes remain the leading cause of unintentional injury deaths among Missouri’s children, ages 1-17. Motor vehicle fatalities include drivers and passengers of motor vehicles, pedestrians who are struck by motor vehicles, bicyclists and occupants of any other form of transportation. Of the **147** motor vehicle deaths among Missouri children in 2003, **116** (78%) were reviewed by county panels.

**Figure 15. Motor Vehicle Fatalities by Sex and Race**

Sex	2001	2002	2003	Race	2001	2002	2003
Female	52	57	60	White	108	115	127
Male	75	80	87	Black	18	20	19
				Other	1	2	1
	127	137	147		127	137	147

**Figure 16. Motor Vehicle Fatalities by Position at Time of Injury**



## Motor Vehicle Fatalities as Reported on CFRP Data Form 2

Type of Vehicle			
Car	59	Other farm vehicle	0
Truck / RV / Van	25	All-terrain vehicle	6
Motorcycle	3	Semi / Tractor Trailer Unit	0
Bicycle	2	Other	3
Riding Mower	0	Unknown	2
Farm Tractor	0	Not-Applicable	16

Conditions of Road	
Normal	85
Loose Gravel	7
Wet	13
Ice or Snow	2
Other	4
Unknown	5

Restraint Used	
Present not used	49
None in vehicle	1
Used Correctly	19
Used Incorrectly	3
Unknown	15
Not Applicable	29

Primary Cause of Accident	
Speeding	32
Carelessness	22
Mechanical Failure	1
Weather	5
Driver Error	32
Other	15
Unknown	9

Alcohol and/or Other Drug Use	
Decedent impaired	5
Driver of decedent's vehicle impaired	7
Driver of other vehicle impaired	6
Not applicable	82
Not answered	16
Helmet Used	
Helmet Worn	5
Helmet Not Worn	7
Not Applicable	98
Not Answered	6

## Driver and Passenger Fatalities

### Representative Cases:

- **Children age 4 years and under should ride appropriately restrained in a child safety seat.**

A 3-year-old girl was riding in the back seat of a car driven by her mother. She was restrained with an adult seat belt; there was no child safety seat present. When the car was struck by a pickup truck that ran a stop sign, the child was ejected through the rear window. She suffered massive head and chest injuries and was pronounced at the scene.

- **The most significant risk factors among teen drivers are inexperience, low rates of seatbelt use and alcohol.**

Four teenage boys decided to skip school together. Riding in two cars at high speeds, apparently racing, they crashed, and all four suffered fatal injuries. None of the victims was wearing a seat belt. Drug paraphernalia was found in and around the wreckage.

Of the **116** reviewed motor vehicle deaths in Missouri in 2003, **89** (77%) involved drivers and passengers. The National Center for Injury Prevention and Control lists two factors as most significant in contributing to motor vehicle-related fatalities among children: (1) unrestrained children and (2) drunk drivers. (“Unrestrained children” refers to infants and toddlers who are not riding in properly installed car seats and older children whose seatbelts are not fastened.)

The National Safe Kids Campaign reports that 40% of children age 4 and under ride unrestrained, placing them at twice the risk of death and injury as those riding restrained. Missouri law requires restraint for children under age 4 and allows for primary enforcement, meaning that a police officer can stop and cite the driver solely for violation of the restraint law. **Thirty-four** of the child passenger fatalities in Missouri in 2003, were known to be riding unrestrained. **Two** of those were children age 4 and under. The most common reasons restrained children are killed are misuse of child safety seats and premature graduation to safety belts.

Alcohol interferes with driving because it impairs the driver’s mental and physical abilities. Of the **116** reviewed motor vehicle fatalities reviewed in 2003, **16** involved a driver impaired by alcohol. **Seven** of those fatalities involved a teen riding with a driver who was impaired; **3** involved a teen driver impaired by alcohol; and **6** were involved in collisions with other vehicles driven by an impaired driver.

Teenagers are three to four times more likely to be involved in a crash than the driving population at large. The highest fatality rates are found among teenage drivers. According to the National Center for Injury Prevention and Control, the most significant risk factors among teenage drivers are inexperience, low rates of seatbelt use and alcohol. Inexperienced drivers lack the perception, judgement and decision-making skills that take practice to acquire.

Missouri’s graduated licensing system took effect in January 2001. In states with GDL systems, teen fatality rates have been reduced as much as 43%. It is important to note, however, that graduated licensing must be combined with education for parents and teens about risks to teenage drivers, including the dangers of underage drinking, speeding, inattention and low seatbelt use.

Seatbelts are known to reduce the risk of a fatal motor vehicle injury by as much as 45%. There is a low rate of seatbelt use among teens. **Fifty-nine** (51%) of the reviewed motor vehicle fatalities among children in Missouri in 2003, were teenagers age 15-17. Of those, **29** (49%) were known to be unrestrained at the time of the crash.

## Pedestrian Fatalities

### Representative Cases:

- **Young children require constant supervision.**

The father of a 2-year-old boy was working on a car that was parked between two mobile homes. The toddler was supposed to be playing on the front porch of their mobile home. A neighbor, driving with a suspended license and apparently intoxicated, backed out of his driveway and ran over the child.

A 3-year-old girl was playing kickball in the street with several other pre-schoolers when she was struck by a car. The view of the children was apparently blocked by several vehicles parked along side of the street. There were no adults supervising the children at the time.

Of the **116** reviewed motor vehicle fatalities among Missouri children in 2003, **17** were pedestrians. **Six** of those were age 4 and under; **4** were between the ages of 5 and 9.

### Pedestrian Deaths among Children

- Children are particularly vulnerable to pedestrian death, because they are exposed to traffic threats that exceed their cognitive, developmental, behavioral, physical and sensory abilities. This is exacerbated by the fact that parents overestimate their children's pedestrian skills. Children are impulsive and have difficulty judging speed, spatial relations and distance.
- Toddlers (ages 1 and 2 years) sustain the highest number of pedestrian injuries, primarily due to their small size and limited traffic experience. More than half of all pedestrian injuries involving toddlers occur when a vehicle is backing up. Young children are at increased risk of pedestrian death and injury in driveways and other relatively protected areas.
- Children, age 5 through 9, are at the greatest risk from pedestrian death and injury. Children, ages 14 and under, are more likely to suffer pedestrian injuries in residential areas with high traffic volume, a higher number of parked vehicles on the street, higher posted speed limits, few pedestrian-control devices and few alternative play areas.
- Practical, skills-based pedestrian safety training efforts have demonstrated improvements in children's traffic behavior. Environmental modifications are effective at reducing pedestrian-motor vehicle-related incidents. (*Safe Kids*)

## Bicycle-related Fatalities

### Representative Cases:

- **Children should always wear helmets when riding bicycles.**

A 6-year-old was riding his bicycle in the street in front of his house. As a neighbor was turning into his driveway, he felt something hit the side of his vehicle. When he checked his rearview mirror, he saw the child and his bike on the ground. The child was not wearing a helmet. He suffered massive head injuries.

Motor vehicle fatalities among Missouri children also include **3** bicyclists who died in 2003, when they were either struck by a motor vehicle or fell. **Three** of those fatalities were reviewed by local panels. None of the bicycle-related fatalities were reported to be wearing a helmet.

The single most effective safety device available to reduce head injury and death from bicycle crashes is a helmet. In the event of a crash, wearing a bicycle helmet reduces the risk of serious head injury by as much as 85% and the risk for brain injury by as much as 88%. Unfortunately, national estimates on helmet usage suggest that only 25% of children, ages 5-14, wear a helmet when riding. Helmet usage is lowest among children ages 11 to 14. (*Safe Kids*) The primary strategies to increase bike helmet use include education, legislation and helmet-distribution programs. (*National Center for Injury Prevention and Control*)

## Fatalities Involving All-Terrain Vehicles

### Representative Cases:

- **Children younger than 16 should not ride adult-size all-terrain vehicles.**

A father allowed his 11-year-old daughter to ride a large ATV on a private road without a helmet. She traveled off the road and struck an embankment, causing the ATV to overturn. The ATV came to rest on top of the child. She was pronounced at the scene.

- **Children should always wear motorcycle-style helmets when riding ATV's.**

A 16-year-old was riding an ATV under the influence of marijuana and other drugs. He was not wearing a helmet. He stopped in the middle of the road, just over the crest of a hill and was struck by a car. He suffered massive head injuries and died at the hospital an hour later.

**Six** of the **116** reviewed motor vehicle fatalities reviewed in 2003, involved all-terrain vehicles. Only **three** (50%) of those six children were reported to be wearing a helmet.

All-terrain vehicles (ATVs) are motorized cycles, with 3 or 4 balloon-style tires, designed for off-road use on a variety of terrains. Although ATVs give the appearance of stability, the 3-wheeled design is especially unstable on hard surfaces. The ATV stability is further compromised by a high center of gravity, a poor or absent suspension system, and no rear-wheel differential. The danger is magnified because these vehicles can attain substantial speeds (30-50 mph). Most injuries involving ATVs occur when the driver loses control and the vehicle rolls over, the driver or passenger is thrown off, or there is a collision with a fixed object.

Despite a significant reduction in ATV-related injuries and deaths since the mid-1980's, children under the age of 16 accounted for 47% of injuries and 36% of the deaths from 1985 through 2001. Head injuries account for most of the deaths, which are usually instantaneous.

In June 2000, the American Academy of Pediatrics (AAP) issued a policy statement with recommendations for public, patient, and parent education by pediatricians; equipment modifications; the use of safety equipment; and the development and improvement of safer off-road trails and responsive emergency medical systems. The AAP also recommended legislation in all states prohibiting the use of 2 and 4-wheeled off-road vehicles by children younger than 16 years, as well as a ban on the sale of new and used 3-wheeled ATV's.

**Prevention Recommendations:**

*For parents:*

- Children, 12 years old and younger, should always ride appropriately restrained in the back seat of all passenger vehicles, particularly vehicles with airbags.
- Never allow children under age 12 to cross streets alone.
- Always model and teach proper pedestrian behavior.
- Never leave children alone in a motor vehicle, even when they are asleep or restrained.

*For community leaders and policy makers:*

- Community leaders should encourage enforcement of existing child restraint laws.
- Missouri lawmakers should strengthen child restraint laws by mandating the following:
  - Include children age 4 through 15 in the child restraint law, thereby making restraint use in the age group subject to primary enforcement.
  - Raise the penalty for violation of child restraint laws to at least \$100 and one driver's license point.
  - Remove the provision of the vehicle equipment regulations that states that if there are not enough safety belts for all passengers, they are not in violation for failure to use.

*For professionals:*

- Facilitate and implement programs that educate parents on appropriate restraint of children in motor vehicles, and provide child safety seats to those who do not have them, such as safety seat check-up events.
- Facilitate and implement programs that educate parents and children on helmet use, instructions on fitting helmets properly and events that provide helmets at little or no cost.

*For Child Fatality Review Panels:*

- Ensure that speed limits, and laws prohibiting driving while intoxicated, along with other traffic safety laws, are strictly enforced.

**Resources and Links:**

- American Academy of Pediatrics . . . . .www.aap.org
- Children's Safety Network . . . . .http://research.marshfieldclinic.org
- National Safe Kids Campaign . . . . .www.safekids.org
- National Center for Injury Prevention and Control . . . . .www.cdc.gov/ncipc
- Harborview Injury Prevention and Research Center . . . . .http://depts.washington.edu
- National Highway Transportation Safety Administration . . . .www.nhtsa.dot.gov
- Think First . . . . .www.thinkfirst.org
- Kids 'N Cars . . . . .www.kidsncars.org

## Keeping Children Safe In and Around Motor Vehicles

Attention concerning child safety and motor vehicles has focused largely on protecting children as they ride in and on vehicles of all kinds, primarily motor vehicles on public roads. The Missouri CFRP reviews and collects data on motor vehicle fatalities among children as passengers and drivers, pedestrians and bicyclists. However, children who are unsupervised in or around motor vehicles that are not in traffic are at increased risk for injury and death.

The Centers for Disease Control (CDC) examined injuries and fatalities among children involved in nontraffic motor vehicle-related incidents from July 2000-June 2001 and documented 78 fatal injuries. Of the fatally injured children, most were age <4 years. The most common type of fatal incident was exposure to excessive heat inside a motor vehicle, followed by being backed over and being hurt when a child put a motor vehicle in motion.

The CDC study recommended several areas for possible prevention, including education campaigns aimed at parents and caregivers that communicate the following: (1) Ensure adequate supervision when children are playing in areas near parked motor vehicles. (2) Never leave children alone in a motor vehicle, even when they are asleep or restrained. (3) Keep motor vehicles locked in a garage or driveway and keep keys out of children's reach.

Kids 'n Cars maintains a national database to evaluate the circumstances and consequences of leaving children unattended in or around motor vehicles. Go to [www.kidsncars.com](http://www.kidsncars.com) for more information.

### Something We Can Do: "Not Even for a Minute" Campaign

Children's Trust Fund points out that a child left alone in an automobile is a car accident that can be prevented. For additional information or to order education materials contact CTF at 573-751-5147 or visit the web site at [www.ctf4kids.org](http://www.ctf4kids.org).

#### Resources and Links:

CDC. Injuries and Deaths Among Children Left Unattended in or Around Motor Vehicles-United States, July 2000-June 2001. MMWR 2002;51:No.26.

Kids 'n Cars.....[www.kidsncars.com](http://www.kidsncars.com)



**Not even  
for a minute!**

**Never leave a child  
alone in a car.**

Left alone in a vehicle, even for a short time, a child is in danger of:  
**dehydration • injury • abduction.**

For more information call the  
Children's Trust Fund at 573-751-5147  
or visit our Web site at [www.ctf4kids.org](http://www.ctf4kids.org).



## Unintentional Suffocation/Strangulation

Unintentional Suffocation/Strangulation was the cause of 38 deaths of Missouri children in 2003, representing 17% of unintentional injury deaths.

### Representative Cases:

- **The safest place for infants to sleep is in a standard crib, on their backs with no soft bedding.**

A mother put her infant son to bed in a crib with a large stuffed bear in the corner. She awoke the next morning to find the baby dead with the bear on top of him. Autopsy revealed fibers from the bear in the baby's mouth.

A baby was left in the care of her grandparents. After a feeding, she was put to bed on her side in an adult bed, along with her two-year-old sister. Pillows were placed along the outer edge of the bed to prevent the baby or her sister from falling out. The baby was found unresponsive with her face down into the comforter.

A father fed and burped his infant daughter, then placed her on his chest as he reclined in a chair. They both fell asleep. When the father awoke three hours later, he found that the baby had slipped off his chest and was lying alongside him; his arm was resting on top of the baby. The baby was not breathing; she was dead on arrival at the emergency room.

A mother, baby and two-year-old sibling were all asleep in the same bed. The mother found the baby unresponsive when she awoke. The baby was pronounced at the hospital. A scene recreation revealed that the baby had become wedged between the mother and the sibling and suffocated.

*Note: The suffocation/strangulation deaths as reported in this section are unintentional. Suffocation/strangulation deaths may also be intentional, inflicted by others (homicide), self-inflicted (suicide) or of an undetermined manner.*

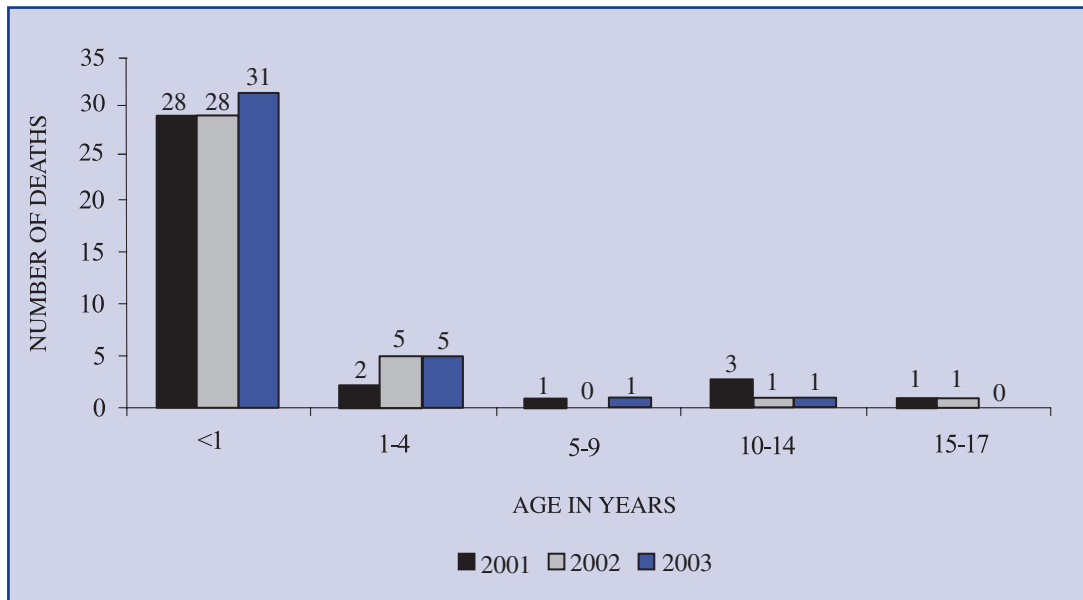
### Suffocation/Strangulation among Young Children

Obstruction of the airway (suffocation, strangulation and choking) is a leading cause of injury death in infants under the age of 1 year in Missouri and in the United States. These injuries occur when children are unable to breathe normally because food or objects block their internal airways (choking); materials block or cover their external airways (suffocation); or items become wrapped around their neck or exert pressure on their neck and interfere with breathing (strangulation). Children, especially those under age 3, are particularly vulnerable to airway obstruction death and injury due to the small size of their upper airways, their relative inexperience with chewing, and their natural tendency to put objects in their mouths. Additionally, infants' inability to lift their heads or extricate themselves from tight places puts them at greater risk. (*Safe Kids*)

In Missouri, in 2003, **38** children died of unintentional suffocation/strangulation. **Five** of those were young children, ranging in ages 1 to 2 years. In two separate incidents, one-year-old toddlers suffocated when they became wedged between the beds on which they had been sleeping and nearby walls; two toddlers choked on food, and a two-year-old strangled on the rung of a ladder for a bunkbed.



**Figure 17. Unintentional Strangulation/Suffocation Deaths by Age**



**Figure 18. Unintentional Strangulation/Suffocation Deaths by Sex and Race**

Sex	2001	2002	2003	Race	2001	2002	2003
Female	18	16	15	White	26	20	23
Male	17	19	23	Black	9	15	15
	<u>35</u>	<u>35</u>	<u>38</u>		<u>35</u>	<u>35</u>	<u>38</u>

Of the **38** Missouri children who died in 2003 as a result of unintentional suffocation/strangulation, **31** (82%) were infants under the age of one year.

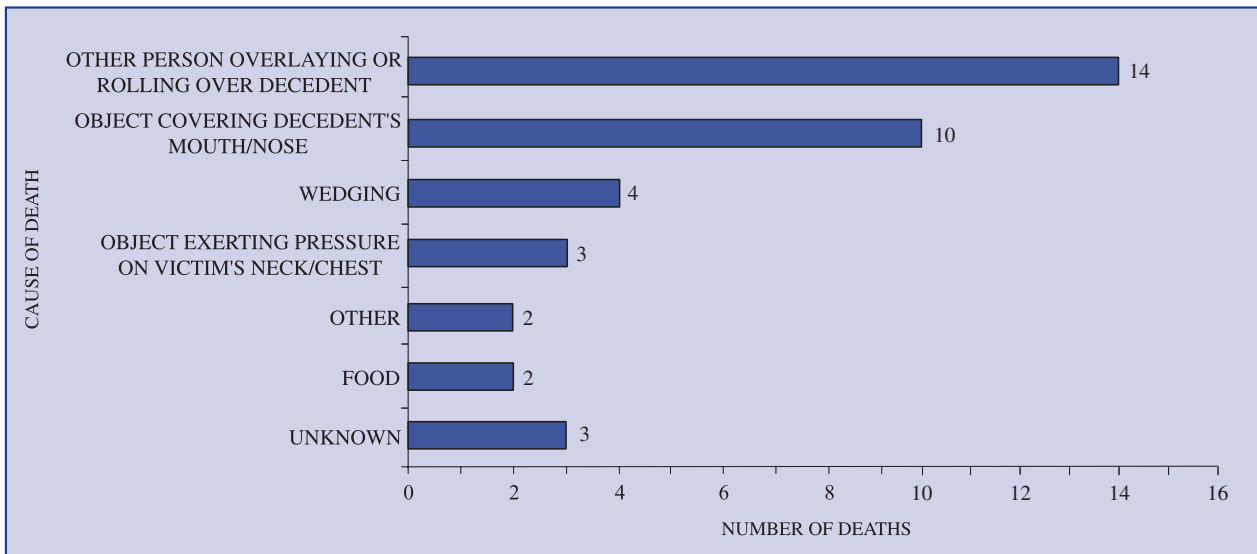
### Sudden Unexpected Infant Deaths: Suffocation and Undetermined

Most infant deaths due to **suffocation** are directly related to an unsafe sleep environment. Many parents and caregivers do not understand the risks associated with unsafe sleeping arrangements. Infants can suffocate when their faces become positioned against or buried in a mattress, cushion, pillow, comforter or bumper pad, or when their faces, noses and mouths are covered by soft bedding, such as pillows, quilts, comforters and sheepskins. In most cases of unintentional suffocation, the sleeping environment is such that most normal infants would not have been able to move themselves out of the unsafe circumstances.

An **overlay** is a type of unintentional suffocation that occurs when an infant is sleeping with one or more persons (bed sharing with adults or older children) and someone rolls over on them. A suffocation due to overlay can be verified by one of the following means: (1) the admission of someone who was sharing the bed that they were overlying the infant when they awoke or (2) the observations of another person. Most infant deaths involving possible or suspected overlay are classified as **undetermined** cause because the actual positions of the infant and other person at the time of the death were not witnessed.

In some cases, even the most thorough and careful scene investigation and autopsy do not produce a definitive cause of death, because risk factors are present that are significant enough to have possibly contributed to the death. One such risk factor is an unsafe or challenged sleep environment. Recent studies of epidemiological factors associated with sudden unexpected infant deaths demonstrate that prone sleeping and the presence of soft bedding near the infant’s head and face pose very strong environmental challenges by limiting dispersal of heat or exhaled air in the vast majority of cases. However, the extent to which such environmental challenges play a role in a particular sudden infant death often cannot be determined. Sudden unexpected infant deaths involving an unsafe sleep environment are classified as **undetermined** when unintentional suffocation is not conclusively demonstrated by the scene investigation. **One** Missouri child died of suffocation of an undetermined manner.

Figure 19. Cause of Unintentional Strangulation/Suffocation Deaths



**Prevention Recommendations:**

*For parents:*

- Follow “Safe Bedding Practices for Infants” recommended by the American Academy of Pediatrics:
  - Place baby on his/her back on a firm, tight-fitting mattress in a crib that meets current safety standards.
  - Remove pillows, quilts, comforters, sheepskins, stuffed toys and other soft products from the crib.
  - Consider using a sleeper or other sleep clothing as an alternative to blankets, with no other covering.
  - If using a blanket, put baby at the foot of the crib. Tuck a thin blanket around the crib mattress, covering only as far as the baby’s chest.
  - Make sure your baby’s head remains uncovered during sleep.
  - Do not place baby on a waterbed, sofa, soft mattress, pillow, or other soft surface to sleep.
- Remove drawstrings from children’s clothing.
- Tie up or remove all cords for window coverings.

*For community leaders and policy makers:*

- Support legislation that requires improved product design, or removal of hazardous products from the market.

*For professionals:*

- Information about unintentional suffocation/strangulation hazards to young children, including unsafe sleep practices should be widely disseminated.
- Teach parents CPR and the Heimlich Maneuver for infants and young children.

*For Child Fatality Review Panels:*

- Report any child death that appears to involve a product hazard to the Consumer Product Safety Commission. The CPSC can also be accessed for product safety research assistance; contact STAT for assistance.

**Resources and Links:**

Consumer Product Safety Commission . . . . . www.cpsc.gov  
 National Safe Kids Campaign. . . . . www.safekids.org  
 American Academy of Pediatrics. . . . . www.aap.org  
 Missouri Children’s Trust Fund, “Safe Crib-Safe Sleep” Campaign . . . . . www.ctf4kids.org  
 Sudden Unexpected Infant Death: A Guide for  
 Missouri Coroners and Medical Examiners . . . . . www.dss.mo.gov/stat/suid.pdf

## Fire/Burn Fatalities

**Fire/Burn injuries were the cause of 9 Missouri child deaths in 2003, representing 4% of unintentional injury deaths.**

### Representative Cases:

- **Lighters, matches and other sources of fire should be kept locked away from children.**

Four children were playing with a lighter on the second floor of a two-story house. A fire broke out. The father managed to get three of the children out of the house, but one child died.

- **Properly installed and maintained smoke detectors are effective in preventing fatalities.**

A four-year-old girl and her mother were taking a nap when a fire broke out in the kitchen. They were overcome by smoke and both died in the fire. There were no working smoke detectors in the home.

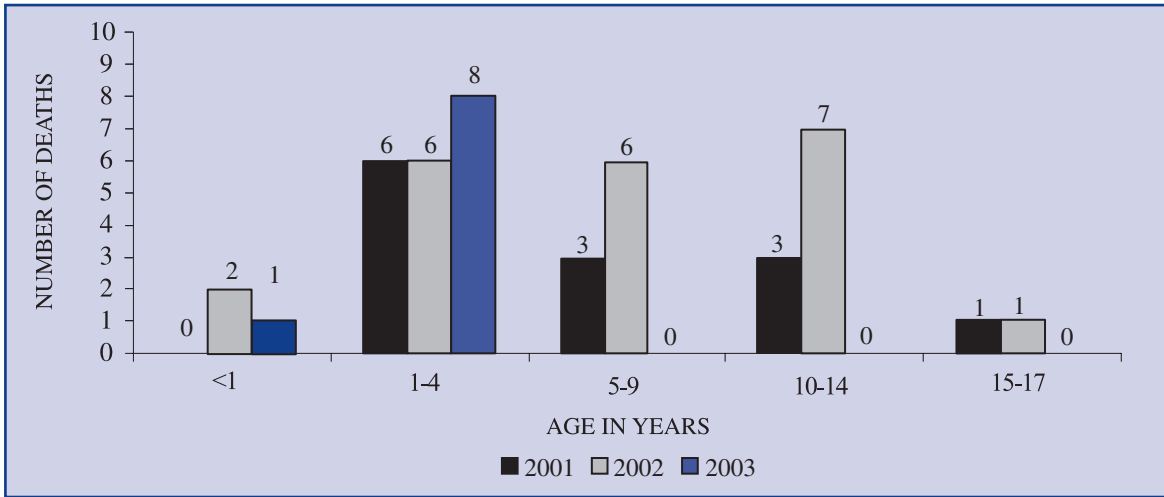
- **Plan and practice several fire escape routes from each room of the home and identify an outside meeting place. Practicing an escape plan may help children who become frightened, and confused in a fire to escape to safety.**

A mother and two children were home when a faulty wall heater started a fire. The mother and one of the children were able to escape, but the younger child died in the fire. The child had apparently become confused and tried to hide from rescuers. The family had never practiced a fire escape plan.

Each year in the United States more than 600 children ages 14 and under die, and nearly 47,000 are injured in fires. In Missouri, **9** children died as a result of unintentional fire/burn injury in 2003; **all** of those children were under the age of 5. Fire and burn injuries are the third leading cause of unintentional injury deaths among Missouri children.

Children, especially those age 5 and under, are at the greatest risk from home fire-related death and injury, and are more than twice as likely to die in a fire than the rest of the population. Young children have a limited ability to react promptly and properly to a fire; they are unable to act, or act irrationally. They may attempt to hide or run from adults attempting to rescue them. More than half the children under the age of 5, who die in home fires, are asleep at the time of the fire. (*Safe Kids*)

**Figure 20. Fire/Burn Deaths by Age**

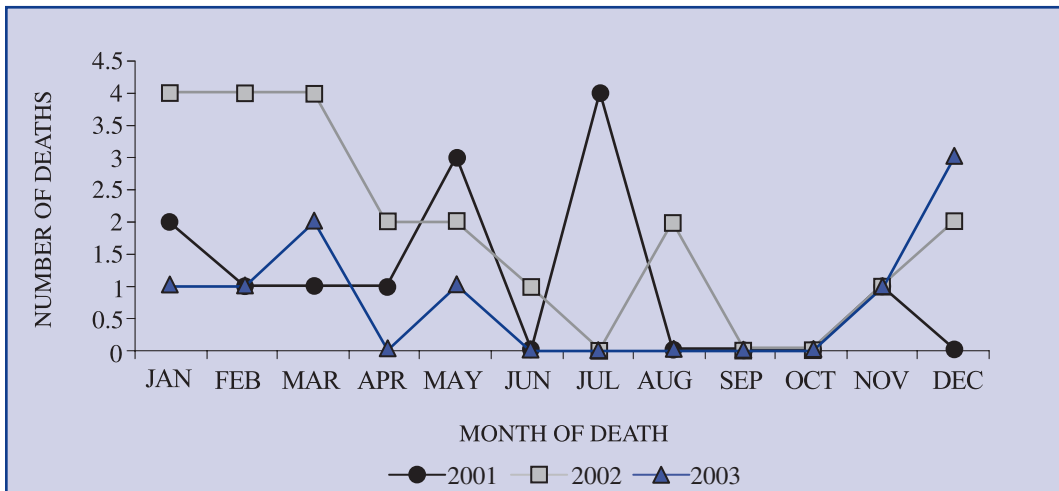


**Figure 21. Fire/Burn Deaths by Sex and Race**

Sex	2001	2002	2003	Race	2001	2002	2003
Female	3	7	4	White	11	14	6
Male	10	15	5	Black	2	6	3
	13	22	9		13	20	9

Residential fires and related fatalities tend to occur more often during cold-weather months, when the use of heating systems is at a peak.

**Figure 22. Fire/Burn Fatalities by Month of Death**



## Fire/Burn Deaths Among Children

- In the United States, a working smoke alarm is not present in two-thirds of the residential fires in which a child is injured or killed. Smoke detectors were reported to be present in only **6** of the **9** fatal Missouri fires reviewed by county CFRP panels in 2003, of those, **3** (50%) were known not to be in working order. Approximately 90% of homes in the U.S. have a smoke alarm; however, these alarms are not always properly maintained.
- Children from low-income families are at greater risk for fire-related death and injury, due to factors such as lack of working smoke alarms, substandard housing, use of alternative heating sources and economic constraints on providing adequate adult supervision. (*Safe Kids*)
- Children living in rural areas have a dramatically higher risk of dying in a residential fire. (*United States Fire Administration*)
- Nationally, over 30% of the fires that kill young children are started by children playing with matches or lighters. These fires tend to begin in the bedroom or living room, where children are often left alone to play. (*National Center for Injury Prevention and Control*) In Missouri, in 2003, **1** child is known to have died in fires started by children playing with matches or lighters.

## Juvenile Firesetting

In Missouri in 2003, **four** children were known to have started a fire in their home by playing with a lighter. Their father managed to rescue three of them, but one of the children died in that fire. The United States Fire Administration points out that events such as this are not isolated incidents and the number of fires set by children is growing. In a typical year in the United States, 300 people are killed and \$300 million in property is destroyed in fires set by children. Children themselves are usually the victims of these fires, accounting for 85 of every 100 fatalities.

It is generally recognized that the motivation for firesetting can be considered in two categories: (1) *Curiosity firesetters* are usually 2-7 year olds, whose fascination leads them to play with matches or lighters. These children do not recognize the consequences of the behavior. They usually respond to educational services, including educational programs, firehouse tours, etc. (2) *Problem firesetters* may also be very young, but generally are 5-17 years old. Their behavior may be considered pathological, a “cry for help.” These children appear to light fires because of emotional or mental disturbances ranging from mild to severe. When firesetting appears to be related to emotional problems, referrals should be made to mental health services. (*United States Fire Administration*)

Regardless of the motivation, firesetting behavior must always be taken very seriously. The United States Fire Administration recommends that parents contact their local fire department or state fire services for help. Local fire departments throughout the state are adopting various approaches to critical elements of prevention: (1) identification/referral of the firesetter, (2) evaluation, and (3) intervention.

## Fire/Burn Fatalities as Reported on CFRP Data Forms

Smoke Alarm Present		Fire Started By	
Yes	6	Decedent	0
No	2	Other	2
Unknown	1	No One	4
Not Applicable	0	Unknown	3

Activity of Person Starting Fire		Multiple Fire Injuries or Deaths	
Playing	1	Yes	9
Smoking	2	No	0
Unknown	1		
Not Applicable	5		

For structure fire, where was decedent found?		Did decedent know of a fire escape plan?	
Hiding	1	Yes	0
In Bed	3	No	0
Stairway	1	Unknown	7
Other	4	Not Applicable	2

Source of Fire		Smoke Alarm in Working Order	
Lighter	1	Yes	0
Space Heater	2	No	3
Faulty Wiring	2	Unknown	3
Other	2	Not Applicable	2
Unknown	2	Not Answered	1

## Something We Can Do: Fire Prevention Awareness Day

When 3 children died in a house fire in St. Louis, CFRP panel members and other community leaders talked about finding a way to target that neighborhood for a fire safety campaign that would provide an appropriate prevention response to those tragic deaths. Smoke detectors, properly installed and maintained, have proven extremely effective in preventing fatalities. For the last 8 years, volunteers have brought “Fire Prevention Awareness Day” to high-risk neighborhoods throughout the region. Working from a staging area where families can gather for food, fun and prevention education, firefighters and volunteers go door to door, installing smoke detectors or fresh batteries and providing fire safety information. Media attention for these events helps spread the prevention message.

For information or a printed guide on “Neighborhood Fire Prevention Awareness Day” call STAT at 800-487-1626.

### Prevention Recommendations:

#### *For parents:*

- Young children require vigilant supervision.
- Keep matches, gasoline, lighters and all other flammable materials locked away and out of children’s reach.
- Install smoke alarms on every level and in every sleeping area. Test them once a month. Replace batteries at least once a year.
- Plan and practice several fire escape routes from each room of the home and identify an outside meeting place. Practicing an escape plan may help children who become frightened and confused in a fire, to escape to safety.

#### *For community leaders and policy makers:*

- Enact laws that require smoke detectors in new and existing housing, and make landlords responsible for ensuring that rental properties have working smoke detectors.
- Enforce building codes and conduct inspections.

#### *For professionals:*

- Smoke detector giveaway programs have proven useful when high-risk areas are targeted. Implement such a program in your community.
- Implement a multi-faceted community campaign to prevent burn injuries. Target a well-defined population with a very specific message.



*For Child Fatality Review Panels:*

- When reviewing a child death that is the result of a residential fire, determine if the local building code requires smoke detectors in residences, and if a working smoke detector was present in the home. Use that information to develop an action plan, such as working to change the code or pursuing prosecution of a negligent landlord. Special attention should be paid to the issue of adult supervision when investigating deaths of young children in house fires.

**Resources and Links:**

- Missouri Division of Fire Safety . . . . .www.mdfs.state.mo.us  
 United States Fire Administration . . . . .www.usfa.fema.gov  
 National Safe Kids Campaign . . . . .www.safekids.org  
 Harborview Injury Prevention and Research Center . . . . .depts.washington.edu/hiprc

**Drownings**

**There were 17 drowning deaths in Missouri in 2003, representing 7% of unintentional injury deaths.**

**Representative Cases:**

- **Toddlers and young children require vigilant adult supervision when outdoors near bodies of water, such as pools, creeks and streams.**

A large bucket half-filled with water was left outdoors near the house. A toddler was left playing, unsupervised, on the porch. She was found upside down in the bucket, drowned.

A young child with Downs Syndrome was left in the care of a 13-year-old sibling. The younger child was on the patio while the older sibling was on the computer, checking on her occasionally. When the older sibling noticed that the young child was no longer in view, she went outside and discovered her at the bottom of the pool.

- **Infants and young children require constant supervision while in a bathtub.**

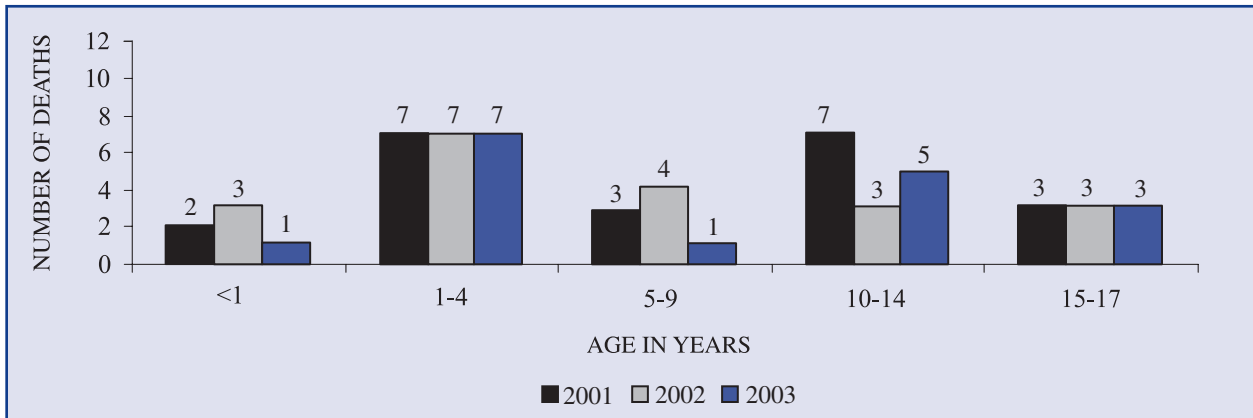
A 6-month-old was left in a bathtub with an older brother and sister. The mother left the bathroom to answer the phone. When she came back, she found that the baby had drowned.

- **Personal flotation devices should be worn at all times in and around open water.**

A mother took her four children to a park where she met her boyfriend. The children were left to play unsupervised; one of the children got into the lake and drowned.

In the United States, drowning is the second leading cause of unintentional injury-related deaths among children, taking more than 1,000 young lives each year. In Missouri, drowning ranked fourth as a leading cause of injury death. Young children, age 4 and under, have the highest drowning death rate (*Safe Kids*). Of the **17** Missouri children who drowned in 2003, **8** (47%) were age 4 and under; **1** of those was an infant under the age of 1 year.

**Figure 23. Drowning Deaths by Age**



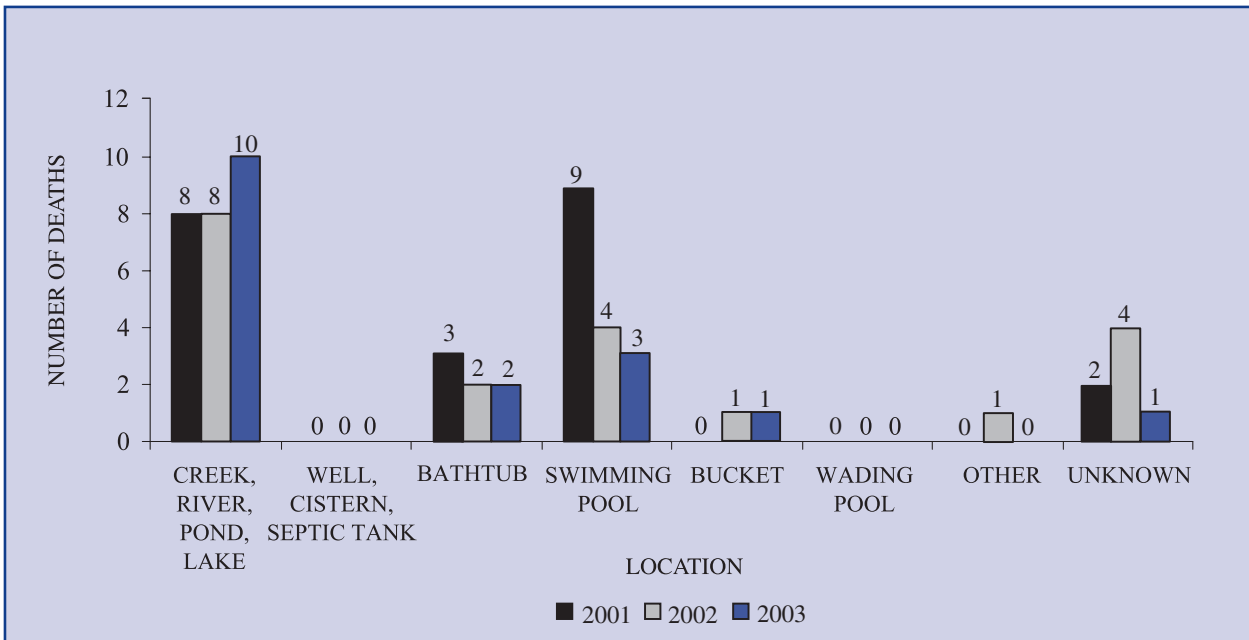
**Figure 24. Drowning Deaths by Sex and Race**

Sex	2001	2002	2003	Race	2001	2002	2003
Female	11	7	4	White	14	15	16
Male	11	13	13	Black	5	5	1
				Other	3	0	0
	<u>22</u>	<u>20</u>	<u>17</u>		<u>22</u>	<u>20</u>	<u>17</u>

Drownings among infants under age 1, typically occur in residential bathtubs. Most drownings among children 1 through 4 years old, occur in residential swimming pools. However, children can drown in as little as one inch of water and, therefore, are at risk of drowning in wading pools, buckets, toilets and hot tubs. Childhood drownings can happen in a matter of seconds and typically occur when a child is left unattended, or during a brief lapse in supervision. Contrary to what many people believe, drowning usually occurs quickly and silently. The scenario that a drowning person will make lots of noise while thrashing around in the water and resurface several times before actually drowning is pervasive, but entirely false.

Older children are more likely to drown in open water sites such as creeks, lakes and rivers. Of the **17** Missouri children who drowned in 2003, **3** (18%) occurred in swimming pools, **10** (59%) occurred in open water sites.

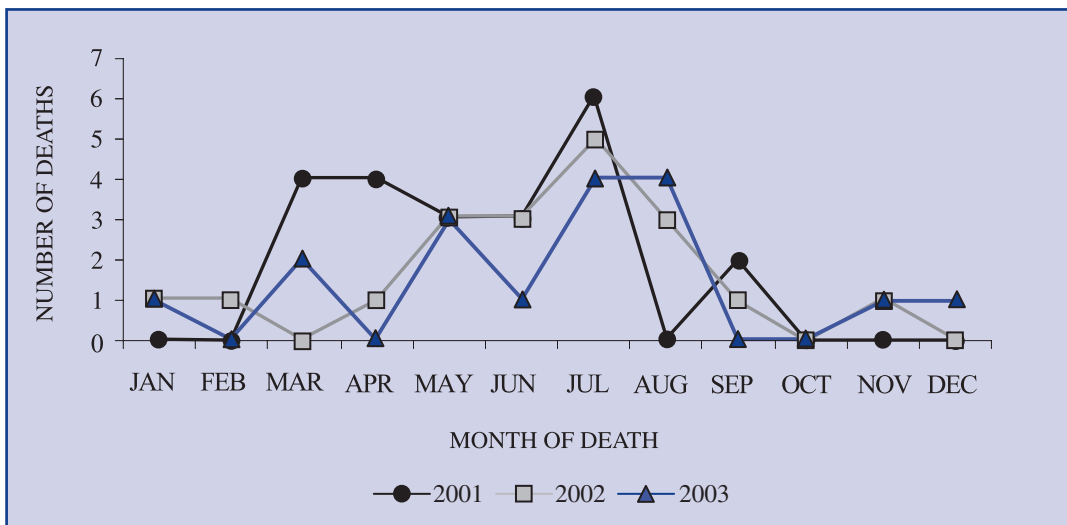
**Figure 25. Location of Drownings**



### Drowning Deaths among Children

- Supervision of children in and around water is critical. Of the **15** drowning fatalities in 2003 in which supervision of the child victim was a consideration, panels found that **7** (47%) had entered the water unattended.
- Use of a personal flotation device is well established as an effective means to prevent drowning deaths. **None** of the Missouri children who drowned in 2003, were wearing a personal flotation device.
- The warm-weather months of June, July, August and September are peak months for drowning, coinciding with increased activity in swimming pools and open water sites.

**Figure 26. Drowning Deaths by Month of Death**



**Prevention Recommendations:**

*For parents:*

- Never leave a child unsupervised in or around water in the home or outdoors, even for a moment.
- For families with residential swimming pools: Install four-sided pool fencing with self-closing and self-latching gates. The fence should be at least four feet tall and completely separate the pool from the house and play area of the yard.
- Ensure that children always wear U.S. Coast Guard-approved personal flotation devices near open water or when participating in water sports.
- Learn CPR.

*For community leaders and policy makers:*

- Enact and enforce pool fencing ordinances.
- Enforce existing regulations regarding the use of personal flotation devices when boating.

*For professionals:*

- Parents, as well as children, should receive water safety education. This should include discussion of water hazards to children (including buckets) and the importance of vigilant supervision.
- Facilitate CPR training for parents of small children.

*For Child Fatality Review Panels:*

- Promote public education about drowning hazards to children and strategies to prevent drowning.

**Resources and Links:**

- National Safe Kids Campaign . . . . .www.safekids.org  
 National Center for Injury Prevention . . . . .www.cdc.gov/ncipc  
 Harborview Injury Prevention and Research Center . . . . .http://depts.washington.edu/hiprc  
 Consumer Product Safety Commission . . . . .www.cpsc.org  
 Red Cross . . . . .www.redcross.org  
 The United States Lifesaving Association (USLA) . . . . .www.usla.org

## Unintentional Firearm Fatalities

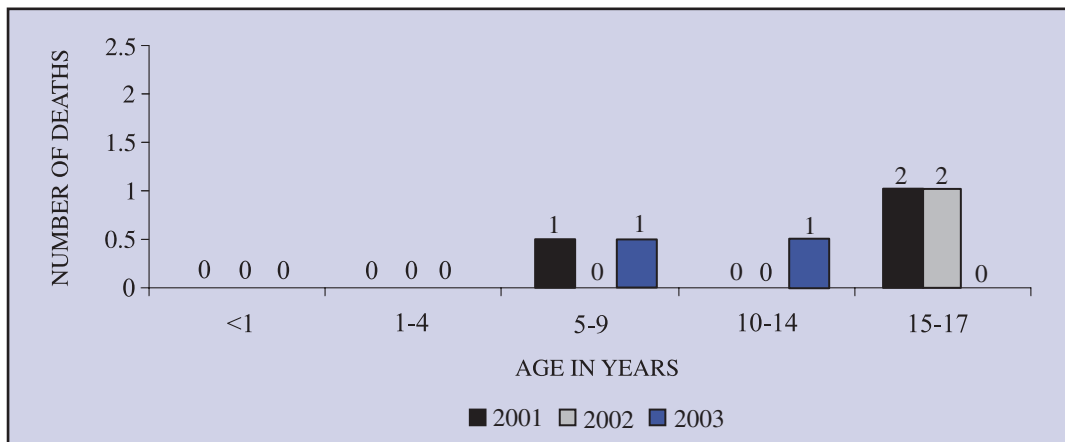
Unintentional firearm injuries were the cause of 2 deaths of Missouri children in 2003, representing 1% of unintentional injuries.

### Representative Cases:

- Education should be offered in all communities about gun safety. Parents should monitor children who are handling firearms.

An 8-year-old child was at home with his grandmother and a 15-year-old sibling. The grandmother owned a handgun which she had left on top of a piece of furniture. While she was in another room, the 15-year-old picked up the gun and began to “play” with it. The gun went off and struck the 8-year-old. The grandmother was later charged with child endangerment because the gun had not been stored safely.

Figure 27. Unintentional Firearm Fatalities by Age



Boys are far more likely to be victims of unintentional firearm deaths than girls. In the United States, nearly 80% of the children killed in unintentional shootings are male. Both of the unintentional firearm deaths among Missouri children in 2003, were male.

Nationally, more than 70% of unintentional firearm shootings involve handguns. Both of the unintentional firearm deaths among Missouri children in 2003, involved a handgun.

### Unintentional Firearm Deaths Among Children

- Most unintentional childhood shooting deaths involve guns kept in the home that have been left loaded and accessible to children, and occur when children play with loaded guns.
- Unintentional shootings among children most often occur when children are unsupervised and out of school. These shootings tend to occur in the late afternoon, during the weekend, and during summer months and the holiday season.

- Nearly two-thirds of parents with school-age children, who keep a gun in the home, believe that the firearm is safe from their children. However, one study found that when a gun was in the home, 75-80% of first and second graders knew where the gun was kept.
- Generally, before age 8, few children can reliably distinguish between real and toy guns, or fully understand the consequences of their actions.
- Children as young as age 3, are strong enough to pull the trigger of many of the handguns available in the U.S.

**Prevention Recommendations:**

*For parents:*

- Parents who own guns should always store firearms unloaded and locked up, with ammunition locked in a separate location, out of children’s reach, use gun locks, load indicators and other safety devices on all firearms.
- All parents should teach children never to touch a gun and tell an adult if they find a gun.

*For community leaders and policy makers:*

- Enforce laws and ordinances that restrict access to and decrease availability of guns.
- Enact and enforce laws requiring new handguns be designed to minimize the likelihood of discharge by children.
- Enact laws outlining owner liability for harm to others, caused by firearms.

*For professionals:*

- Implement gun safety education. It is important to include public education about the hazards of firearms, as one component of an overall effort to reduce the incidence of firearm injuries and deaths.

*For Child Fatality Review Panels:*

- In all cases of firearm fatalities involving children, ensure that every effort is made to determine the source of the gun and consider the responsibility of the gun owner in the incident.

**Resources and Links:**

National Safe Kids Campaign . . . . .www.safekids.org

Harborview Injury Prevention and Research Center . . . . .http://depts.washington.edu/hiprc

## Child Fatalities Involving Inadequate Care

Note that child deaths discussed under “Inadequate Care” are not included with Child Abuse and Neglect Fatality data reported in the section that follows. In the case of most child fatalities, negligent treatment is not the direct cause of death, but may be identified as a contributing factor by the local CFRP panel reviewing the death. Examples include delayed or inadequate medical care, malnutrition, unsanitary living conditions and lack of supervision, designated as “Inadequate Care.”

The majority of unintentional fatalities and serious injuries among young children are the result of a temporary lack of supervision or inattention at a critical moment. This is often the case when infants and toddlers drown in bathtubs and swimming pools, or young children dart in front of moving vehicles. Parents and caretakers often underestimate the degree of supervision required by young children. This is complicated by the mistaken idea that young children have some sort of innate fear of dangerous situations.

CFRP panels reported **32** child fatalities in 2003, in which inadequate care contributed to the death of a child.

Inadequate Care or Neglect	
Apparent Lack of Supervision	20
Apparent Lack of Medical Care	3
Delayed Medical Care	2
Out-of-Hospital Birth	3
Other	8
Unrestrained Motor Vehicle Passengers Age 4 and Under	3

In addition, young children riding as unrestrained passengers, killed in motor vehicle crashes, should be included in this category. In Missouri in 2003, CFRP panels reported **34** child passenger fatalities in which the victim was known to be riding unrestrained; of those, **2** were age 4 and under, **3** were age 5-9 years and **13** were age 10-14 years.