Preventing Child Deaths in Missouri

MISSOURI DEPARTMENT OF SOCIAL SERVICES
STATE TECHNICAL ASSISTANCE TEAM
STAT

The Missouri Child Fatality Review Program

Annual Report for 2004

MATT BLUNT
Governor

K. GARY SHERMAN
Director

MISSOURI
DEPARTMENT OF SOCIAL SERVICES
DIVISION OF LEGAL SERVICES
PO Box 1527
Jefferson City
65102-1527
Telephone: 573-751-3229, FAX: 573-526-1484

RELAY MISSOURI
for hearing and speech impaired
TEXT TELEPHONE
1-800-735-2966
VOICE
1-800-735-2466

September 2005

Dear Friends:

Enclosed is a copy of the 2004 Missouri Child Fatality Review Program (CFRP) Annual Report, *Preventing Child Deaths in Missouri*. Thirteen years into the program, we are satisfied that we are more accurately identifying the causes of child deaths. Many factors are involved in child deaths, but the numbers appear to indicate that we are making a positive difference. A significant decline in the overall death rate of children is a very positive indicator.

We must also remember that for every child who dies, many more sustain non-fatal, accidental and deliberately inflicted injuries. The county-based CFRP panels are as concerned about protecting the living, as they are in more accurately determining how children die. Sharing what we learn through education, prevention and deterrence are the keys to ensuring a safer environment for all Missouri children and families.

Much of what has been gained over the past thirteen years is the result of multidisciplinary coordination and cooperation. Much of what remains to be accomplished involves breaking down barriers, and strengthening information-sharing and multidisciplinary team work.

We are confident that Missouri child protection professionals will respond to these critical challenges. Please join us in our efforts to reduce life threatening and life altering risks to children.

Sincerely,

Harry D. Williams
Director

Matt Blunt, Governor
State of Missouri

K. Gary Sherman, Director
Missouri Department of Social Services
Harry D. Williams, Director
Division of Legal Services

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Jefferson City, MO 65102-1641
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Preventing Child Deaths in Missouri

The Missouri Child Fatality Review Program

Annual Report for 2004

Missouri Department of Social Services
Division of Legal Services
State Technical Assistance Team
PO Box 208
Jefferson City, Missouri 65102-0208
(800) 487-1626
(573) 751-5980
http://www.dss.mo.gov/stat/mcfrp.htm

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This Report is Proudly Presented by the State Technical Assistance Team

Harry D. Williams, Division of Legal Services Director
Gus H. Kolilis, DLS Deputy Director/STAT Chief
Rodney Jones, Investigations Administrator
Marion McMillan, Lead Investigator
Tommy Capps, Investigator
Cindy Gonnella, Investigator
Emerson "Skip" McGuire, Investigator
Michael Stern, Investigator
Dan Stewart, Investigator
Susan Stoltz, Investigator
Larry Wyrick, Investigator
Maurine Hill, Child Fatality Review Program Manager
Jerry Holder, Jackson County Metro Case Coordinator
Holly Otto, Child Fatality Review Program Specialist
Theresa Murrell, Child Fatality Review Program Data Specialist
Connie Lambert, Secretary
Suzanne McCune, Child Fatality Review Program Consultant
Rose Psara, St. Louis City Medical Examiner's Office,
St. Louis City CFRP Coordinator
Sue Mrozociwz, St. Louis County Medical Examiner's Office,
St. Louis County CFRP Coordinator
Kathleen Diebold, Manager of Forensic Services/Chief Investigator/
Child Death Specialist, Franklin, Jefferson and St. Charles County
CFRP Coordinator

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Dedication

This report reflects the work of many dedicated professionals throughout the state of Missouri. Through better understanding of how and why children die, we strive to improve and protect the lives of Missouri's youngest citizens. We will always remember that each number represents a precious life lost. We dedicate this report to these children and their families.

Missouri Child Fatality Review Program

Child Fatality Review In Missouri

Death rates for infants, children, and teens are widely recognized as valuable measures of child wellbeing, particularly when viewed within the context of a decade of demographic changes in our state. However, it is the accuracy of key factors associated with child deaths that provides the basis for identifying vulnerable children, and responds in ways that will protect and improve their lives. In 1995, the U.S. Advisory Board on Child Abuse and Neglect concluded that child abuse and neglect fatalities, and other serious and fatal injuries to children could not be significantly reduced or prevented without more complete information about why these deaths occur and how such tragedies might be avoided. It was widely acknowledged that many child abuse and neglect deaths were under-reported and/or misclassified. Scholars, professionals, and officials around the nation had agreed that a system of comprehensive Child Death Review Teams could make a major difference. In 1991, Missouri had initiated the most comprehensive child fatality review system in the nation, designed to produce an accurate picture of each child death, as well as a database providing ongoing surveillance of all childhood fatalities. The Missouri Child Fatality Review Program (CFRP) was presented in the Advisory Board's report as a state of the art model. While the program has evolved and adapted to meet new challenges, the objectives have remained the same-identifying potentially fatal risks to infants and children, and responding with multi-level prevention strategies.

In Missouri, all fatality data is collected by means of standardized forms and entered into a database. What is learned can be used immediately by the community where the death occurred. The sum of statewide data is used to identify trends and patterns requiring systemic solutions. The Missouri Child Fatality Review Program has succeeded in remaining effective, relevant and sustainable over 10 years. The success of the program is due in large part to the support of panel members, administrators and other professionals who do this difficult work voluntarily, because they understand its importance. This work is a true expression of advocacy for children and families in our state.

Missouri legislation requires that every county in our state (including the City of St. Louis) establish a multidisciplinary panel to examine the deaths of all children under the age of 18. If the death meets specific criteria, or if requested by the coroner/medical examiner, it is referred to the county's multidisciplinary CFRP panel. The minimum core panel for each county includes: Coroner/Medical Examiner, Law Enforcement, Juvenile/Family Court, Emergency Medical Services, Prosecutor, Public Health and Children's Division. Optional members may be added at the discretion of the panel. The panels do **not** act as investigative bodies. Their purpose is to enhance the knowledge base of the mandated investigators and to evaluate the potential service and prevention interventions for the family and community.

Of all child deaths in Missouri, about 1200 deaths annually, approximately one-third merit review. To come under review, the cause of the child's death must be unclear, unexplained, or of a suspicious circumstance. All sudden, unexplained deaths of infants one week to one year of age, are required to be reviewed by the CFRP panel. (This is the only age group for which an autopsy is mandatory.)

State Technical Assistance Team and Child Fatality Review Program

Missouri State Statutes

- Section 210.150 and 210.152 (Confidentiality and Reporting of Child Fatalities)
- Section 210.192 and 210.194 (Child Fatality Review Panels)
- Section 210.195 (State Technical Assistance Team - duties)
- Section 210.196 (Child Death Pathologists)
- Section 211.321; 219.061 (Accessibility of juvenile records for child fatality review)
- Section 194.117 (Sudden Infant Death; infant autopsies)
- Section 58.452 and 58.722 (Coroner/Medical Examiners responsibilities regarding child fatality review)

Confidentiality Issues (RSMo 210.192 to 210.196)

A proper Child Fatality Review Program (CFRP) review of a child death requires a thorough examination of all relevant data, including historical information concerning the deceased child and his/her family. Much of this information is protected from disclosure by law, especially medical and child abuse/neglect information. Therefore, CFRP panel meetings are always closed to the public and cannot be lawfully conducted unless the public is excluded. Each CFRP panel member should confine his or her public statements only to the fact that the panel met and that each panel member was charged to implement their own statutory mandates.

In no case, should any other information about the case or CFRP panel discussions be disclosed. All CFRP panel members who are asked to make a public statement should refer such inquiries to the panel spokesperson. Failure to observe this procedure may violate Children's Division regulations, as well as state and federal confidentiality statutes that contain penalties.

Individual disciplines (coroner/medical examiners, sheriff departments, prosecuting attorneys, etc.) can still make public statements consistent with their individual agency's participation in the investigation, as long as they do not refer to the specific details discussed at the CFRP panel meeting.

No CFRP panel member is prohibited from making public statements about the general purpose, nature or effects of the CFRP process. Panel members should also be aware that the legislation which established the CFRP panels provides official immunity to all panel participants.

When a Child Dies

The loss of a loved one...particularly a child...is perhaps the greatest loss an individual or family can experience. Many overwhelming feelings follow the death of a child. This grief and sadness is a natural and normal reaction to an irreplaceable loss.

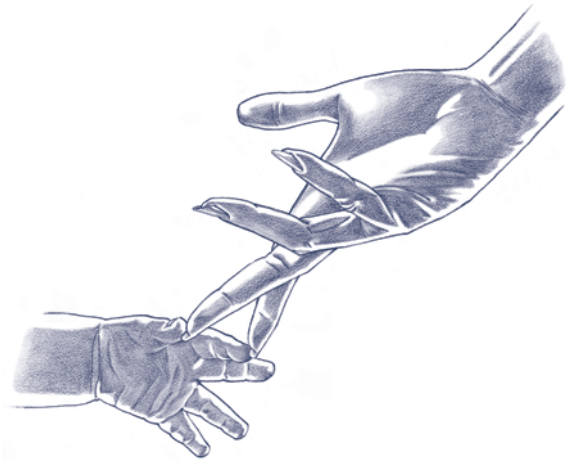
To better understand why and how our children die, the State of Missouri has implemented the Child Fatality Review Program. By reviewing child fatalities, we hope to identify causes and strategies that will ultimately lead to a reduction, in certain cases, of child fatalities. Missouri state law (RSMo 210.192) now requires that any child, birth through age 17, who dies from any cause, be reported to the coroner/medical examiner. The coroner/medical examiner is mandated to follow specific procedures concerning these fatalities. These include:

- All **sudden, unexplained** deaths of infants, from one week to one year, are required to be autopsied by a certified child-death pathologist. The most common questions for parents, "Why did our baby die?" can really only be answered by having an autopsy performed. During an autopsy, the internal organs are examined. This is done in a professional manner, so that the dignity of the child is maintained. The procedure will not prevent having an open casket at the funeral. Preliminary results may be available in a few days; however, the final report may take several weeks.

- In all other child deaths, the coroner/medical examiner is required to consult with a certified child-death pathologist regarding the circumstances of death. In some cases, an autopsy will be ordered.

- If the fatality meets certain criteria, the circumstances surrounding the death will be reviewed by the county Child Fatality Review Program panel. Facts regarding the death are discussed by the professionals who serve on the panel. The represented agencies on the panel have the responsibility to contribute information that will lead to a more accurate determination of the cause of death; they also try to identify ways to prevent further deaths from occurring. **All information is kept confidential.**

The Child Fatality Review Program is a true expression of child advocacy. Like you, we want to know why the death occurred. We will do everything we can to explain and help you understand why.



Missouri Incident Fatalities

"A simple child,
That lightly draws its breath,
And feels its life in every limb,
What should it know of death?"
-William Woodsworth

In reviewing this report, the reader should be aware of some important definitions and details about how child deaths are reported and certified in Missouri, summarized here: (Please refer to Appendix 6, Definitions of Important Terms and Variables, for additional information.)

- **"Missouri Child Fatalities"** refers to all children age 17 and under, who died in Missouri, without regard to the state of residence or the state in which the illness, injury or event occurred. (For example, a child who is a resident of Kentucky, injured in a motor vehicle crash in Illinois and brought to a Missouri hospital, where he or she subsequently dies, would be counted as a "Missouri Child Fatality." This death would be reported to the Child Fatality Review Program on a Data Form 1, Section A only, as an out-of-state event and reported to Illinois.)

- **"Missouri Incident Fatality"** refers to a *fatal illness, injury or event,* which occurs *within the state of Missouri.* (This is not necessarily the county or state in which the child resided.) If the death meets the criteria for panel review, it is reviewed in the county in which the *fatal injury, illness or event* occurred.

- *Every* Missouri incident child fatality is required to be reviewed by the coroner or medical examiner and the chairperson for the county CFRP panel. The findings of the review are reported on the Data Form 1.

- Any child death that is *unclear, unexplained, or of a suspicious circumstance, and all sudden unexplained deaths of infants one week to one year of age* are required to be reviewed by a county-based CFRP panel. Panel findings are reported on the Data Form 2. Panel members receive annual training on the investigation of child fatalities.

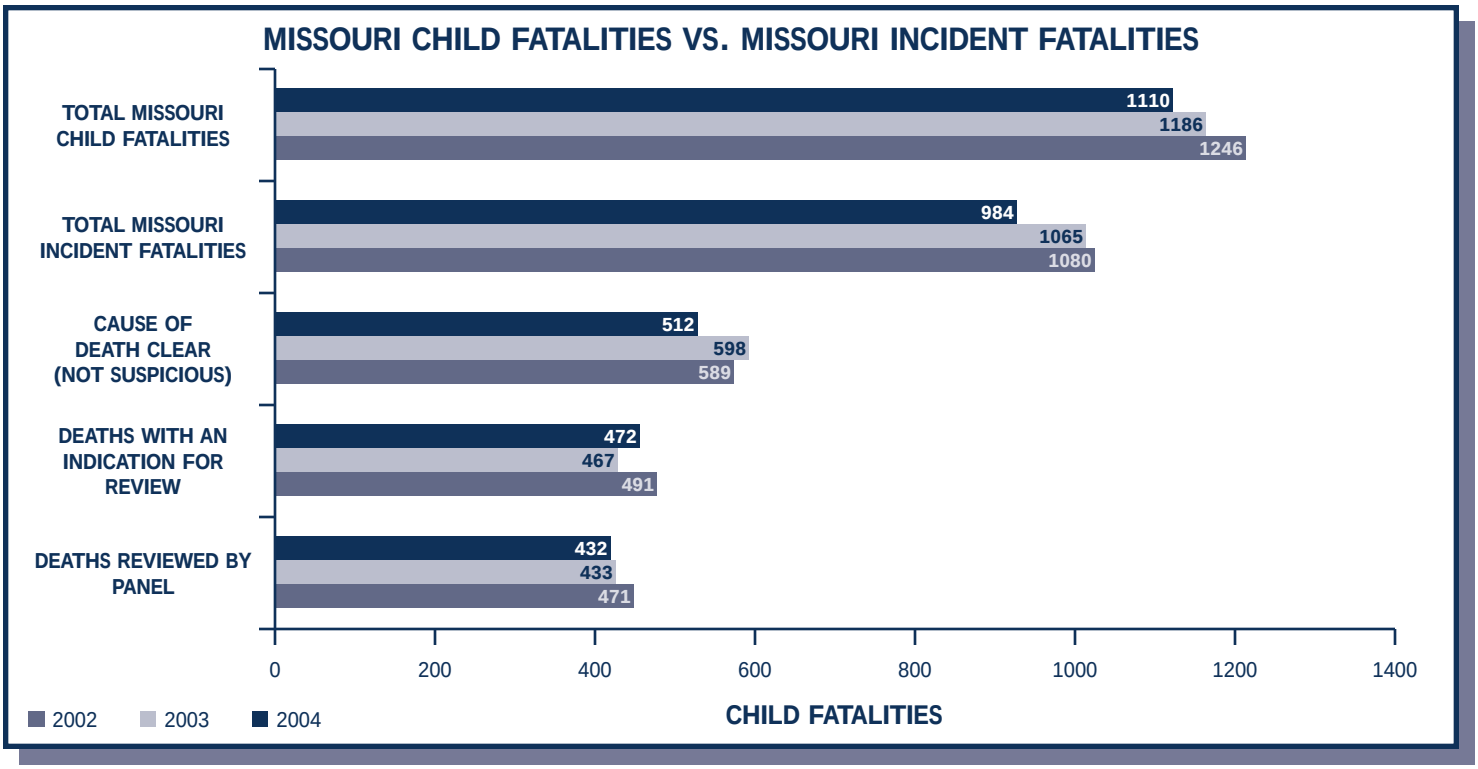
- **Multiple-Cause Deaths:** *Cause of death* is a disease, abnormality, injury or poisoning that contributed directly or indirectly to death. However, a death often results from the combined effect of two or more conditions. Because the Child Fatality Review Program is focused on the prevention of child fatalities, the precipitating events are of particular concern. Therefore, deaths are categorized according to the *circumstances of death,* which may not be the immediate cause of death listed on the death certificate. (An example would be a child passenger in a car that runs off the road and lands in a ditch full of water; the "immediate cause of death" is listed on the death certificate as "drowning," but the precipitating event was a motor vehicle accident. This death would be reported in the Motor Vehicle Fatalities section, with a footnote indicating that the death certificate lists "drowning" as the immediate cause of death.)

- The Child Fatality Review Program data management unit links data collected on the Data Forms 1 and 2 with the Department of Health and Senior Services birth and death data. Every attempt is made to reconcile the two systems; however, in some cases, crucial data components are incomplete and are noted, as appropriate.

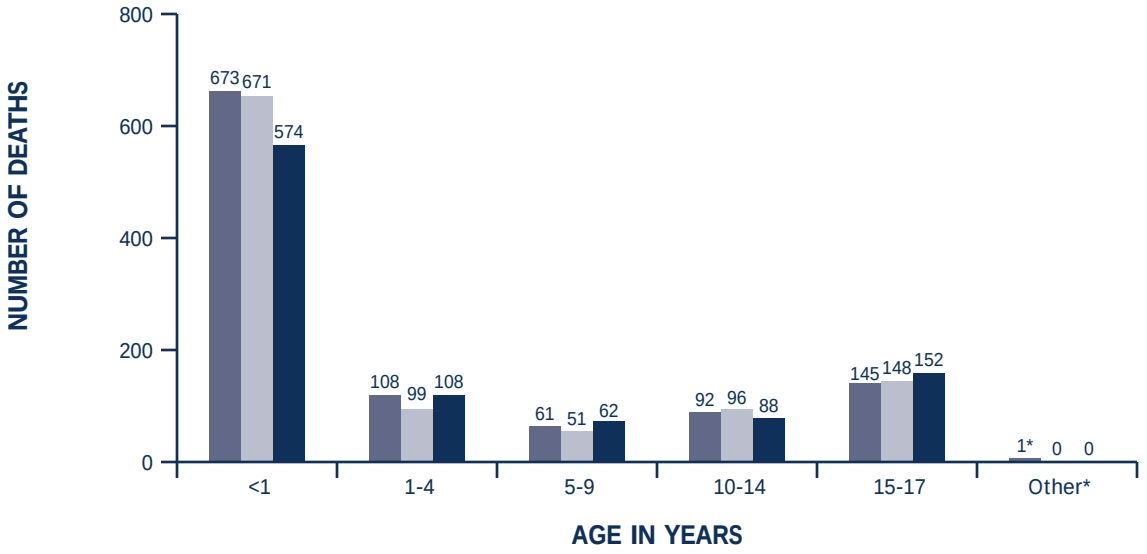
- All deaths included in this CFRP Annual Report occurred in calendar year 2004. Some of the cases reviewed may not have been brought before a county panel until the year 2005.
- In some cases, panels did not complete all of the information requested on the data form.
- Of the **472** Missouri Incident Fatalities reported on Data Form 1 in 2004, with indication for review, **40** did not receive required CFRP panel review, or panel findings were not submitted on Data Form 2. These **40** fatalities are included in this 2004 CFRP Annual Report because the data, though incomplete, is useful and accurate within the limitations on the Data Form 1 information.
- In 2004, **68** Missouri Incident Fatalities were not reported on either a Data Form 1 or Data Form 2, but were reported to CFRP by death certificates from the Department of Health and Senior Services. From information provided by the death certificate, **23** of these 68 fatalities (34%) had at least one indication for review; among those, **12** motor vehicle fatalities and **one** drowning. These fatalities are not included in the data for this annual report.

Summary of Findings
Missouri Incident Fatalities, 2004

In 2004, **1110** children age 17 and under died in Missouri. Of those deaths, **984** were determined to be "Missouri incident fatalities" and, therefore, subject to review by the coroner or medical examiner. Of the 984 deaths, **472** had indications for review by a county CFRP panel, and of those **432** were reviewed and a Data Form 2 completed.



MISSOURI INCIDENTFATALITIES BY AGE

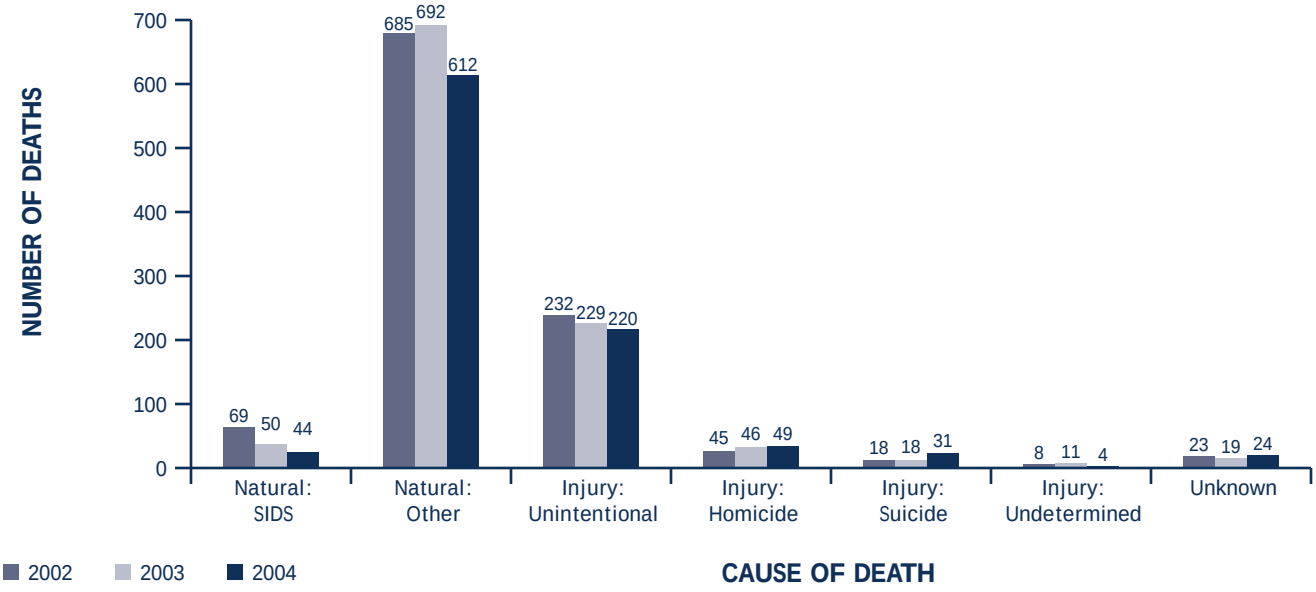


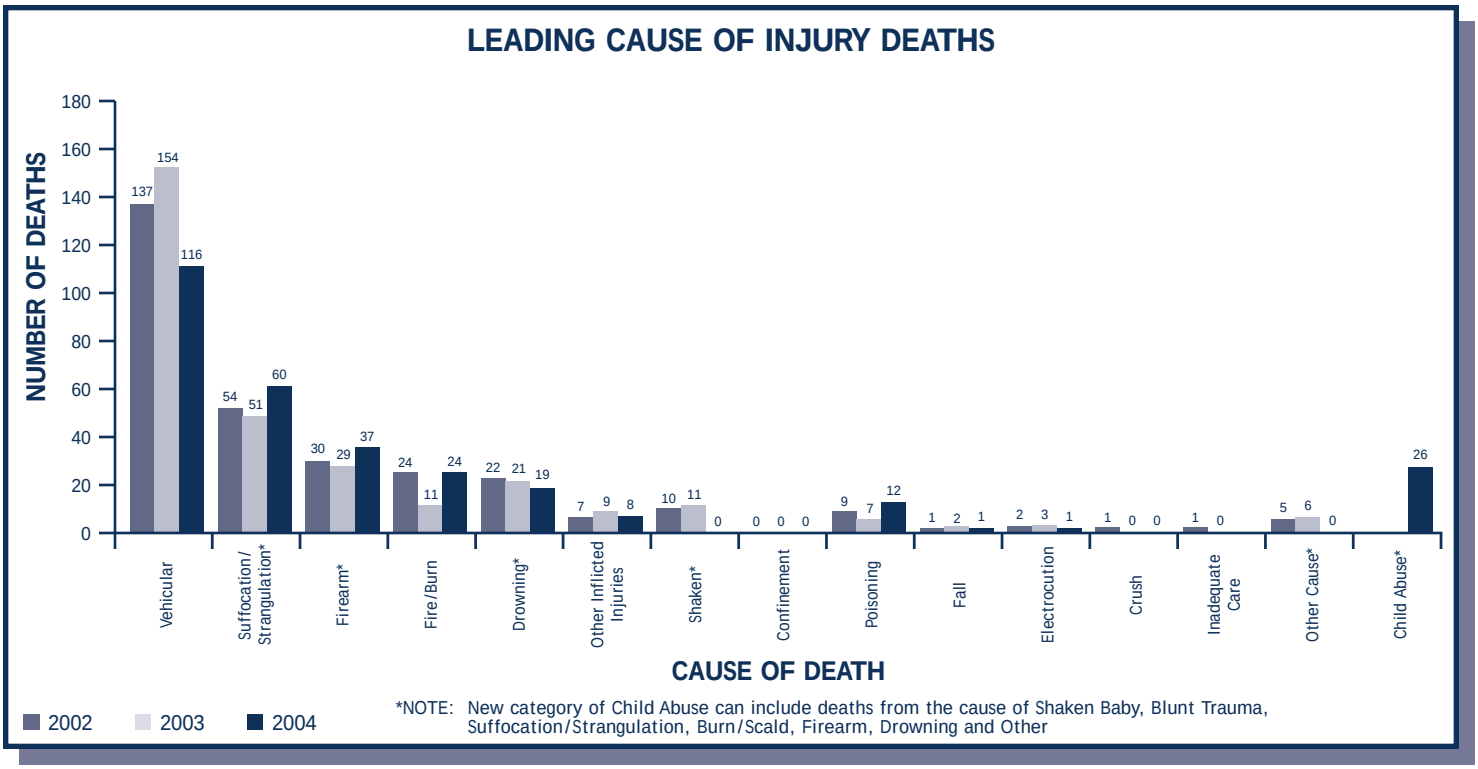
*Note: Child disappeared at age 16, remains found in 2002

MISSOURI INCIDENT FATALITIES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	464	456	422	WHITE	758	779	705
MALE	616	608	562	BLACK	303	267	257
OTHER		1		OTHER	19	19	22
	1080	1065	984		1080	1065	984

MISSOURI INCIDENT FATALITIES BY MANNER





Illness/Natural Cause Deaths

All Illness/Natural Cause Deaths Other Than SIDS

"The infant mortality rate has declined steadily during the last decade, due in part, to improved medical technology and public health outreach…Infants are more likely to die before their first birthday if they live in unsafe homes and neighborhoods or have inadequate nutrition, health care or supervision."

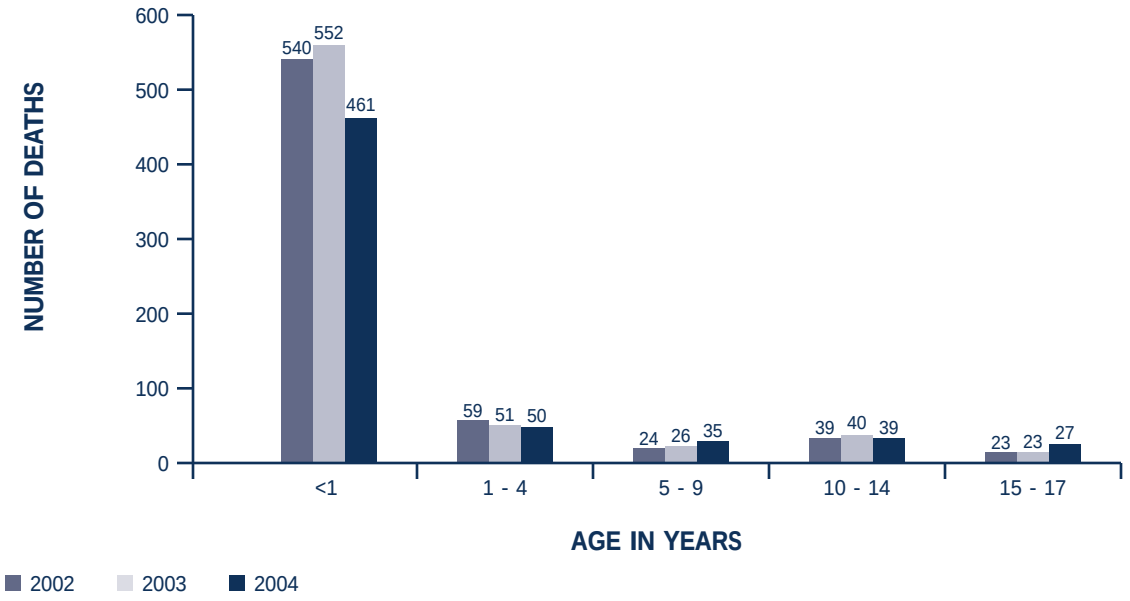
-Kids Count Missouri, Citizens for Missouri's Children and Children's Trust Fund

Illness/natural causes, other than SIDS, were responsible for the death of 612 Missouri children in 2004, representing 62% of all Missouri incident fatalities.

Most child deaths are related to illness or other natural cause. Illness/natural cause deaths include prematurity, congenital anomalies, infection and other conditions. The vast majority of natural cause deaths occur before the first year of life and are often related to prematurity or birth defects.

In 2004, prematurity was the cause of **269** infant deaths (44% of all illness/natural cause deaths other than SIDS). Of those, **192** (72%) were born at 25 weeks or less gestation and **48** (25%) of those were born at less than 20 weeks gestation.

ILLNESS/NATURAL CAUSE DEATHS BY AGE

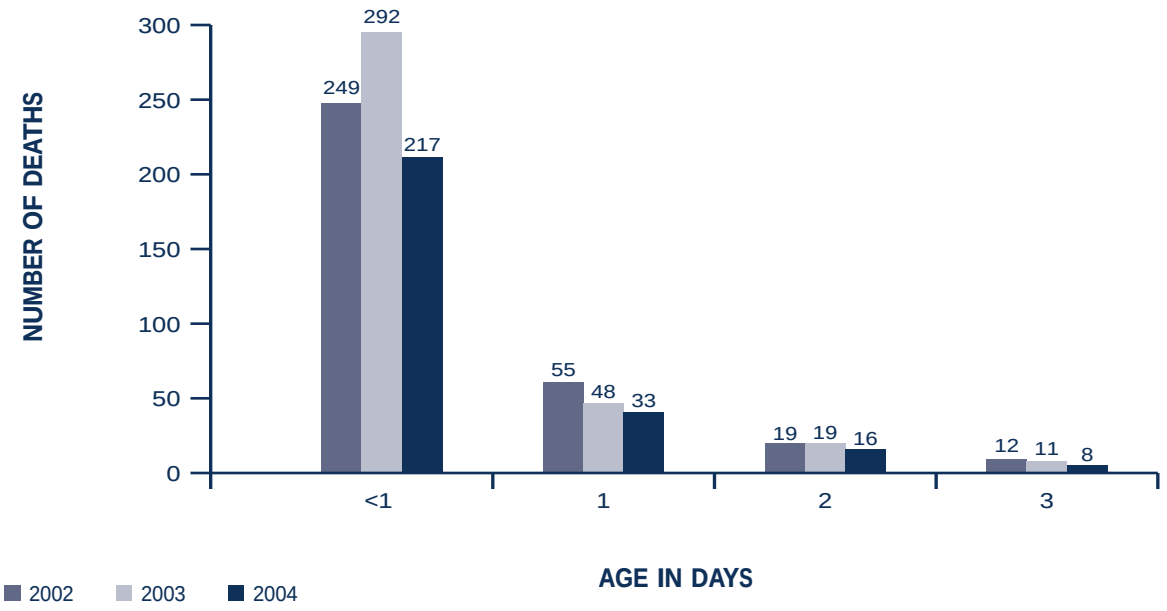


ILLNESS/NATURAL CAUSE DEATHS BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	316	323	268	WHITE	471	489	424
MALE	269	368	344	BLACK	202	187	174
OTHER		1		OTHER	12	16	14
	685	692	612		685	692	612

In 2004, congenital anomalies were the cause of **144** infant deaths, representing 24% of all illness/natural causes, other than SIDS. Infants less than one year of age comprised the majority (75%) of the illness/natural cause deaths in 2004 with **461**. Of those, **274** (60%) occurred within the first three days of life and **217** (47%) occurred within 24 hours of birth.

CHILDREN AGE THREE DAYS OR LESS THAT DIED OF ILLNESS/NATURAL CAUSES



CHILDREN LESS THAN ONE YEAR WHO DIED OF ILLNESS/NATURAL CAUSES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	248	251	197	WHITE	371	387	313
MALE	292	300	264	BLACK	157	154	136
OTHER		1		OTHER	12	11	12
	540	552	461		540	552	461

Natural Cause Deaths in Infants Less Than One Year as Reported on CFRP Data Forms

AGE AT DEATH	
0 - 24 hours	233
24 - 28 hours	23
48 hours - 6 weeks	95
6 weeks - 6 months	52
6 months - 1 year	31
Not Answered	27

GESTATIONAL AGE AT BIRTH	
<20 weeks	48
20 - 25 weeks	144
26 - 30 weeks	52
31 - 37 weeks	63
>37 weeks	48
Unknown	68
Not Answered	38

BIRTH WEIGHT IN GRAMS	
<750 grams (<1lb 10oz)	171
750 - 1,499 grams (1lb 10oz - 3lbs 5oz)	57
1,500 grams - 2,499 grams (3lbs 5oz - 5lbs 5oz)	42
>2,500 grams (>5lbs 5oz)	62
Unknown	81
Not Answered	48

MULTIPLE BIRTHS	
Yes	69
No	360
Not Answered	32

MEDICAL COMPLICATIONS DURING PREGNANCY	
Yes	9
No	6
Unknown	19

SMOKING DURING PREGNANCY	
Yes	6
No	7
Unknown	21

DRUG USE DURING PREGNANCY	
Yes	6
No	14
Unknown	13

ALCOHOL USE DURING PREGNANCY	
Yes	2
No	8
Unknown	23

Sudden Unexpected Infant Deaths

In 2004, there were 122 sudden, unexpected deaths of infants less than one year of age in Missouri.

Representative Cases:

- **Infants should be placed on their backs to sleep.**

  A five-month-old child was taken to the home of a babysitter, who immediately put him down for a nap. She placed the baby on his stomach with his head to the side and covered him with a baby blanket. When the babysitter check on him later, he was not breathing.

  A four-month-old, one of twins, typically slept alone in her own crib. However, the infant was ill and fussy, so the mother put the baby in her own bed. The adult bed was very soft and was covered with several blankets. The mother slept on the sofa. In the morning, she found the baby face down in the blankets, unresponsive.

  A two-month old infant was placed in his crib on his stomach. He was found face down and cold to the touch. Living conditions were found to be unsanitary and there was evidence of marijuana use.

- **The safest place for infants to sleep is in a standard crib with a firm mattress and no soft bedding.**

  An 11-day-old infant was put to bed in his crib, in the evening. Later that night, the mother took him into her bed to breastfeed, at which time she apparently fell asleep. The mother awoke very early in the morning and found the baby on his back, unresponsive and blue.

  A two-month-old infant was sleeping in a king size bed with her mother, father and brother. The mother breastfed the baby at 3:00 a.m. When the parent awoke in the morning the baby was not breathing.

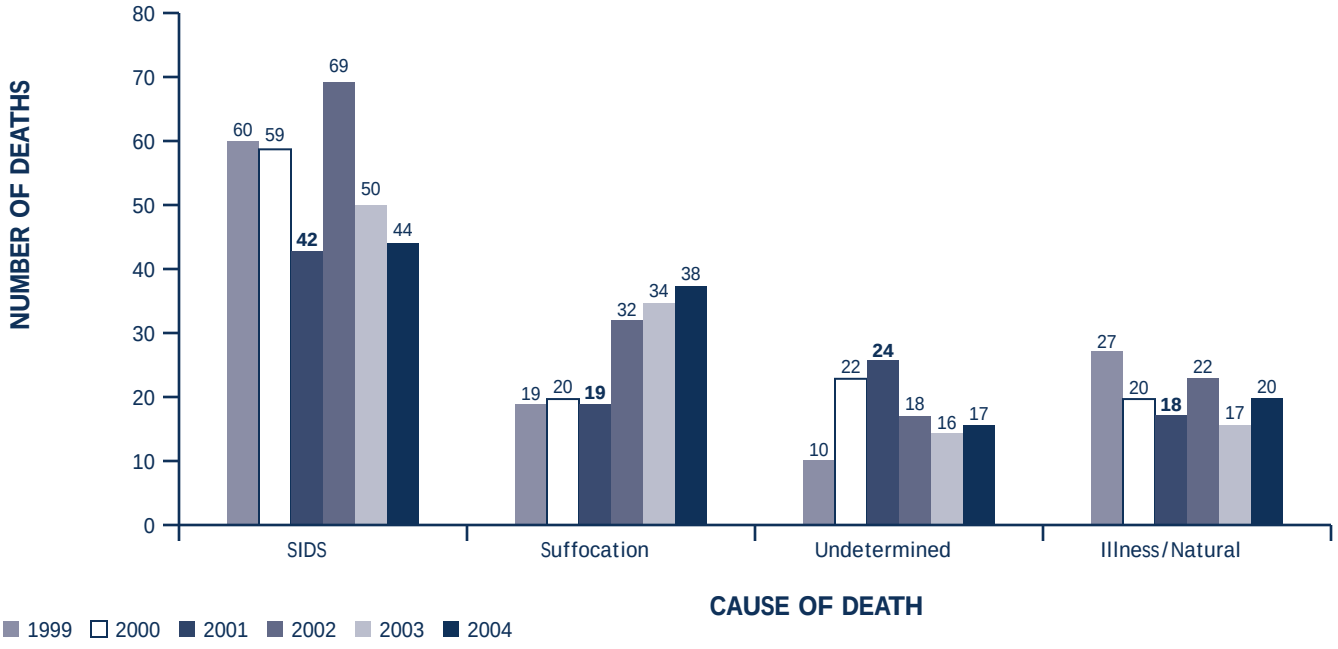
  A two-month-old infant was given a bottle by his father, who was sitting in an overstuffed recliner. The father apparently fell asleep. The baby slid between the arm of the recliner and the father's leg and suffocated.

In 2004, there were **122** sudden, unexpected deaths of infants under the age of one year reported to the Child Fatality Review Program in 2004. Based on autopsy, investigation and CFRP panel review, **44** were diagnosed as Sudden Infant Death Syndrome, **38** unintentional suffocation, **20** illness/natural cause, and **17** could not be determined. **Three** infants were found to be homicide victims; those deaths are discussed under "Fatal Child Abuse and Neglect."

Since its inception in 1992, tracking changes in the occurrence and cause of sudden, unexpected infant deaths in Missouri, has been a key objective of the Child Fatality Review Program. Coincidentally, back-to-sleep recommendations were issued in 1992 and since that time, there has been a substantial reduction in SIDS deaths. This decline has generally been attributed to the efforts of the national

Back-To-Sleep campaign, which experienced great success in persuading parents and caretakers to change their behavior with regard to sleep position for infants. Since 1999, however, the rate of SIDS deaths has continued to decline, while non-SIDS diagnoses, including unintentional suffocation and undetermined, have increased. Unfortunately, the rate of infant deaths in the United States has not changed significantly during this time period, suggesting that changes in the classification of SIDS deaths is occurring. Researchers continue promising efforts to identify the common vulnerability of certain infants to sudden death, while the medical community struggles to define universally acceptable guidelines for certification of sudden, unexpected infant death. Nevertheless, unsafe sleep arrangements have been identified as a risk factor in the vast majority of sudden, unexpected infant deaths and the implications for risk reduction are extraordinary. For this reason, all sleep-related deaths in infants less than one year of age are now examined as a group in the section titled "Sudden, Unexpected Infant Deaths."

SUDDEN, UNEXPECTED INFANT DEATHS BY CAUSE 1999-2004



SUDDEN UNEXPECTED INFANT DEATHS BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	49	42	50	WHITE	96	82	85
MALE	92	75	69	BLACK	44	33	31
				OTHER	1	2	3
	141	117	119		141	117	119

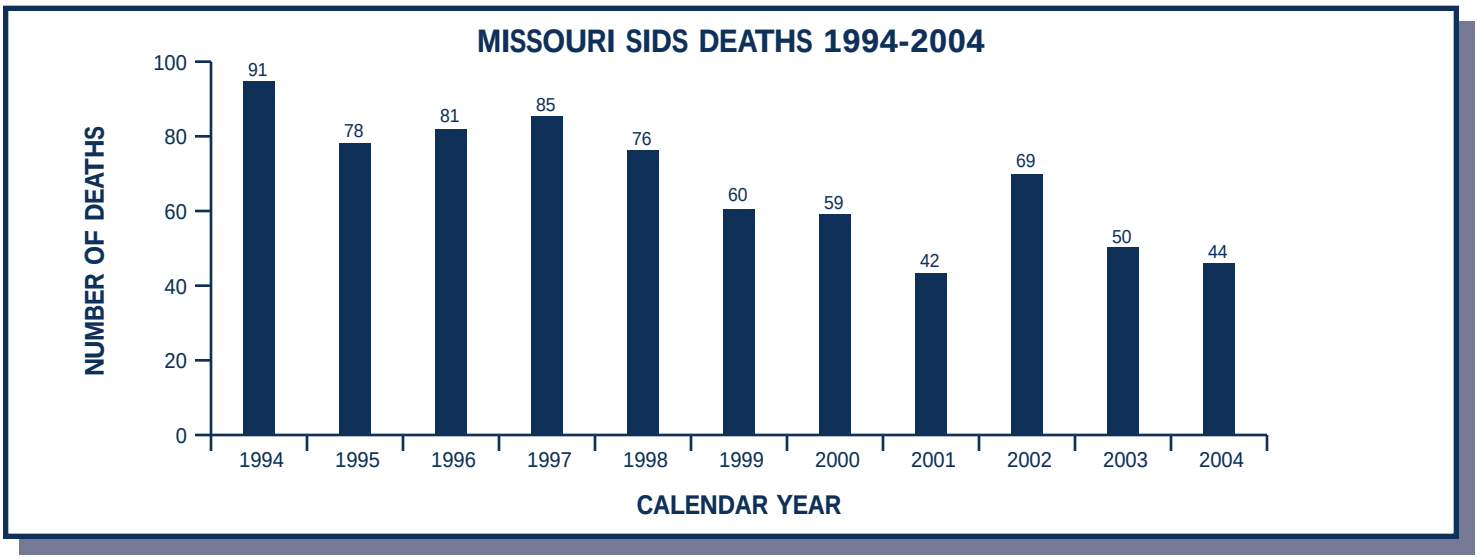
Sudden Infant Death Syndrome

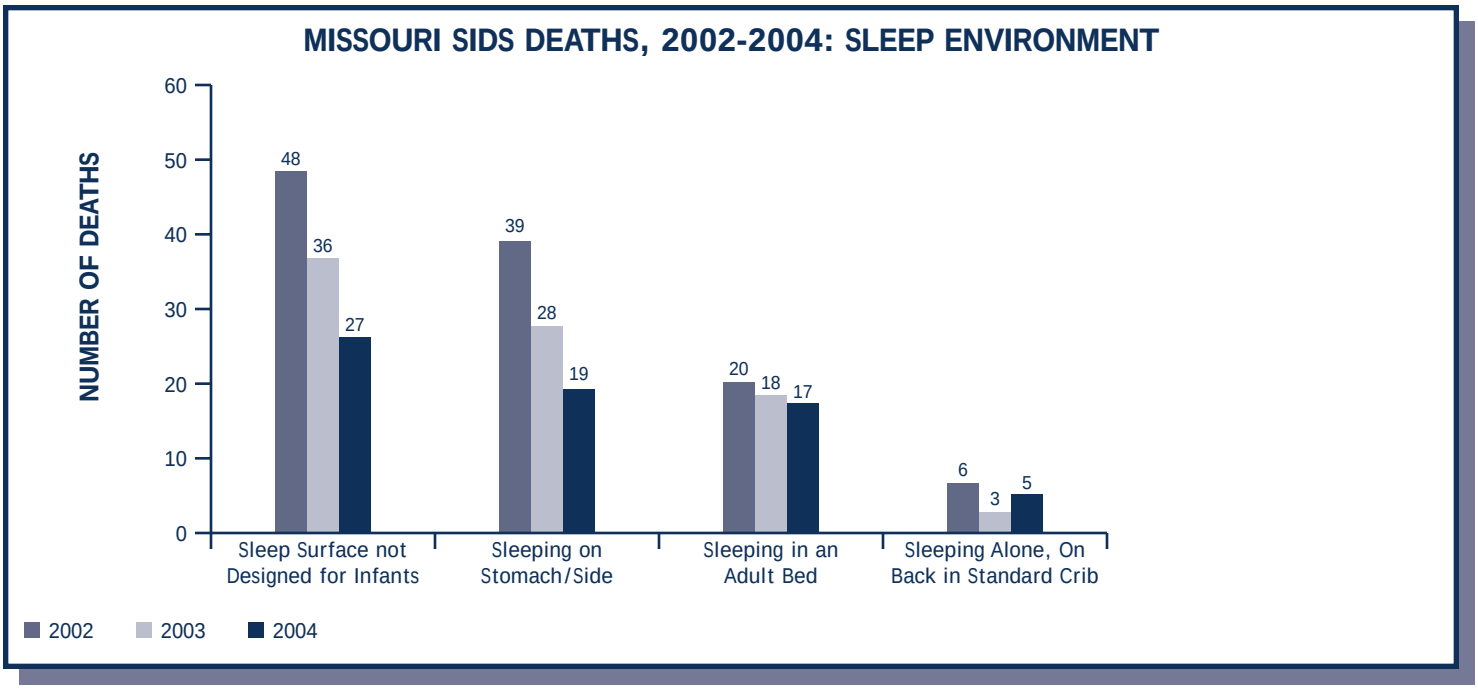
In 2004, Sudden Infant Death Syndrome (SIDS) was the cause of death of 44 Missouri Infants.

SIDS is a diagnosis of exclusion; there are no pathological markers that distinguish SIDS from other causes of sudden infant death. There are no known warning signs or symptoms. Ninety percent of SIDS deaths occur in the first six months of life, with a peak at 2-4 months. While there are several known risk factors, the cause or causes of SIDS are unknown at this time.

The Triple Risk Model for SIDS is often used to describe the confluence of events that may lead to the sudden death of an infant. This model involves a vulnerable infant (one with a subtle defect involving brainstem arousal responses), at a critical development period (less than six months of age), exposed to environmental challenges to which he/she does not respond (such as overheating, tobacco smoke, or prone sleeping).

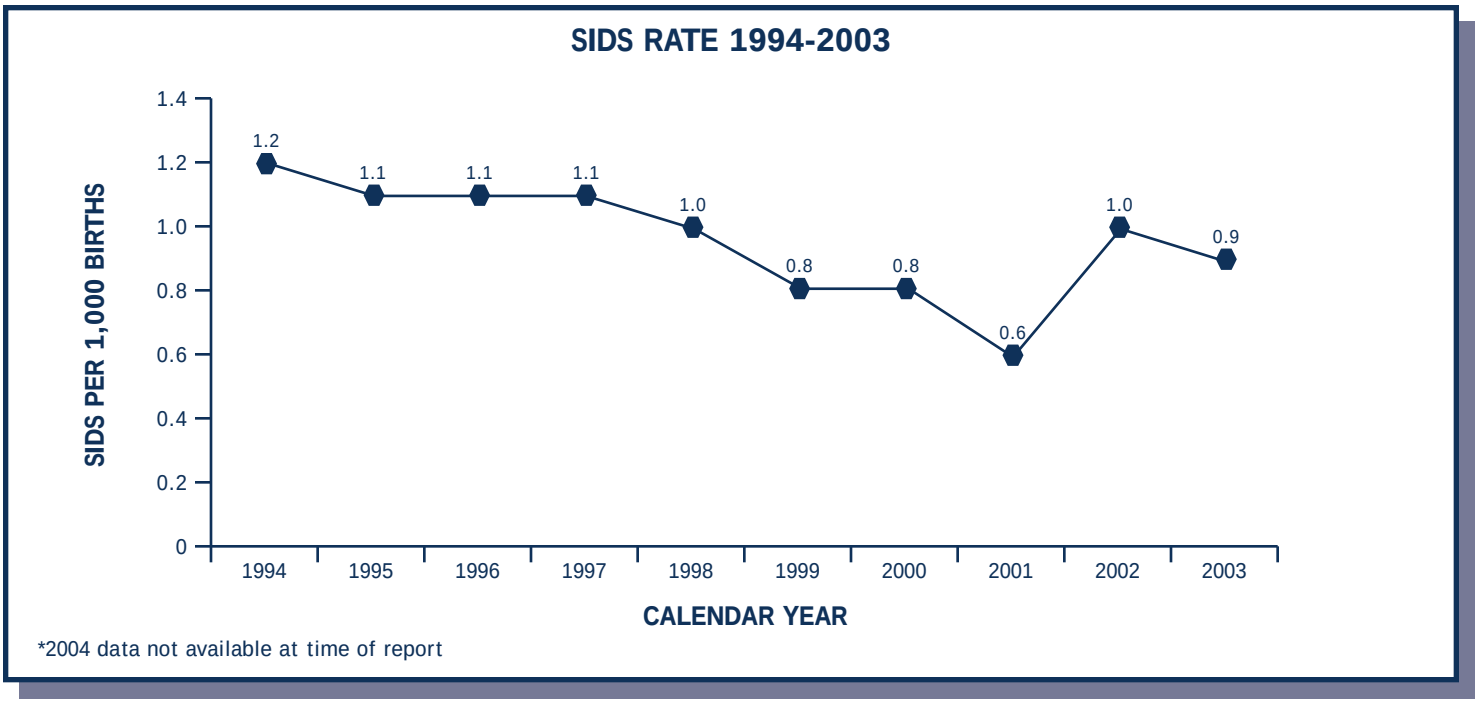
SIDS is generally considered a natural manner of death. SIDS is not caused by spitting up, choking or minor illnesses, such as a cold. SIDS is not caused by immunizations; it is not contagious; SIDS is not child abuse. SIDS is not the cause of every sudden or unexpected infant death.





Recent research findings have resulted in accelerated progress in the understanding of sudden unexpected infant death. Unsafe sleep arrangements are now known to be a highly significant risk factor occurring in the large majority of cases of sudden infant death diagnosed as SIDS, unintentional suffocation and cause undetermined. Unsafe sleep arrangements include any sleep surface not designed for infants, sleeping with head or face covered, and sharing a sleep surface.

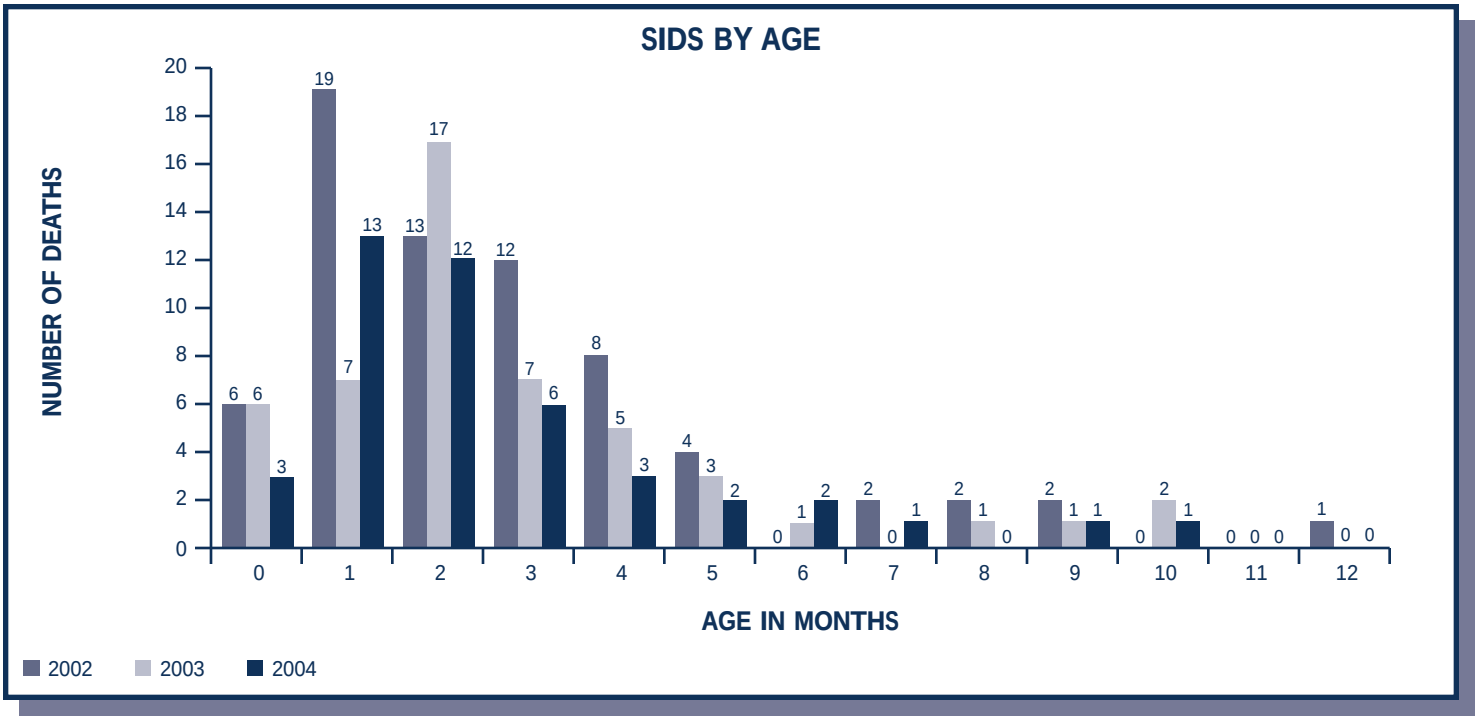
In Missouri, of the **44** sudden, unexpected infant deaths reviewed by county CFRP panels and diagnosed as SIDS in 2004, **19** (43%) were known to be sleeping on their stomach or side. **Twenty-seven** (61%) of those infants were not sleeping in a standard crib on a firm mattress and **17** were known to be sleeping in an adult bed. Only **five** (11%) sudden, unexpected infant deaths diagnosed as SIDS, were known to be sleeping alone on their backs, in a standard crib with head and face uncovered.



*2004 data not available at time of report

SIDS FATALITIES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	24	14	19	WHITE	45	38	28
MALE	45	36	25	BLACK	24	11	15
				OTHER	0	1	1
	69	50	44		69	50	44



Suffocation in Infants

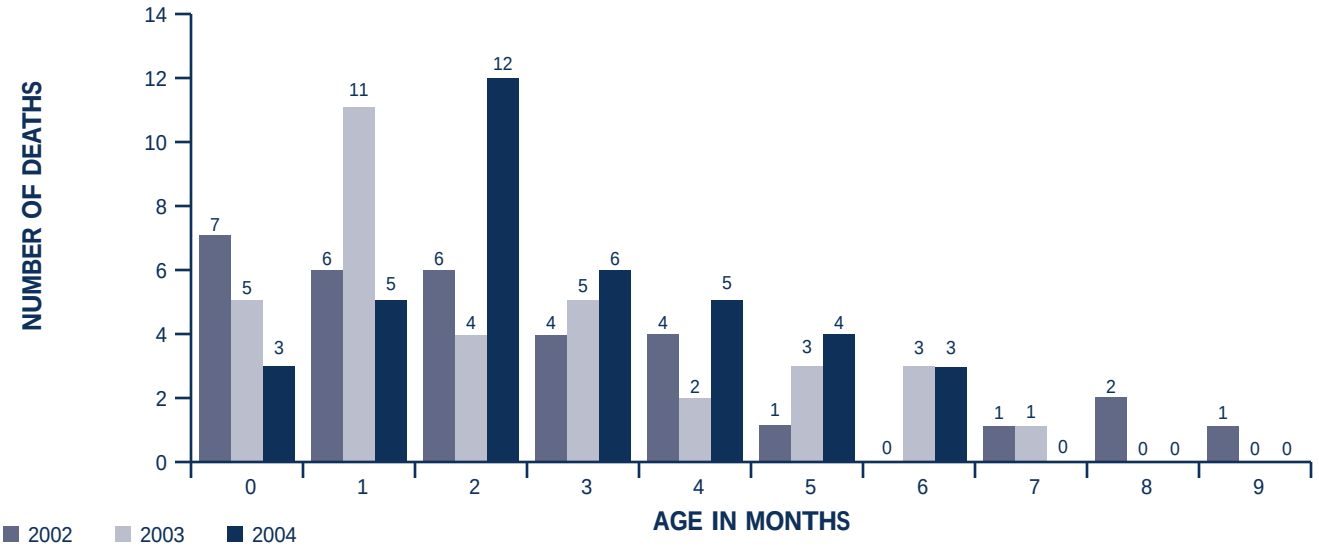
Unintentional Suffocation was the cause of death of 38 (4%) Missouri infants in 2004.

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 other 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 position of the infant and other person at the time of death were not witnessed.

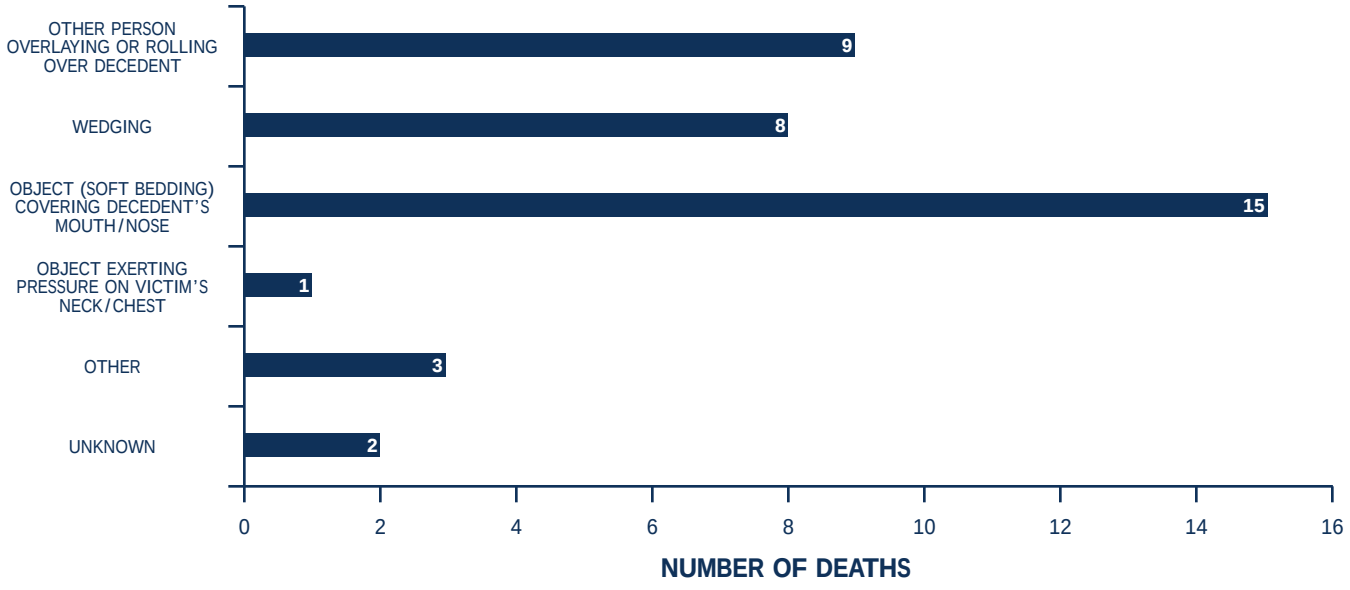
UNINTENTIONAL SUFFOCATIONS UNDER 1 YEAR OF AGE BY AGE IN MONTHS



UNINTENTIONAL SUFFOCATION BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	14	15	16	WHITE	18	18	23
MALE	18	19	22	BLACK	14	16	14
				OTHER			1
	32	34	38		32	34	38

CAUSE OF UNINTENTIONAL STRANGULATION/SUFFOCATION DEATHS



UNDETERMINED

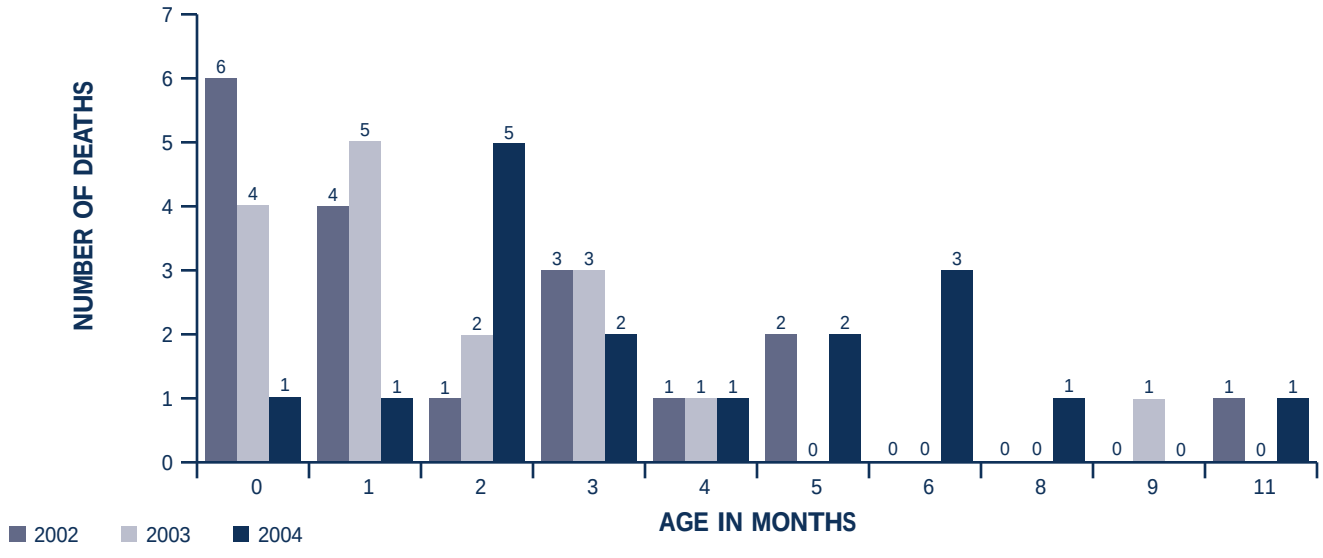
In 2004, the cause of death of 17 (2%) Missouri infants could not be determined.

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.

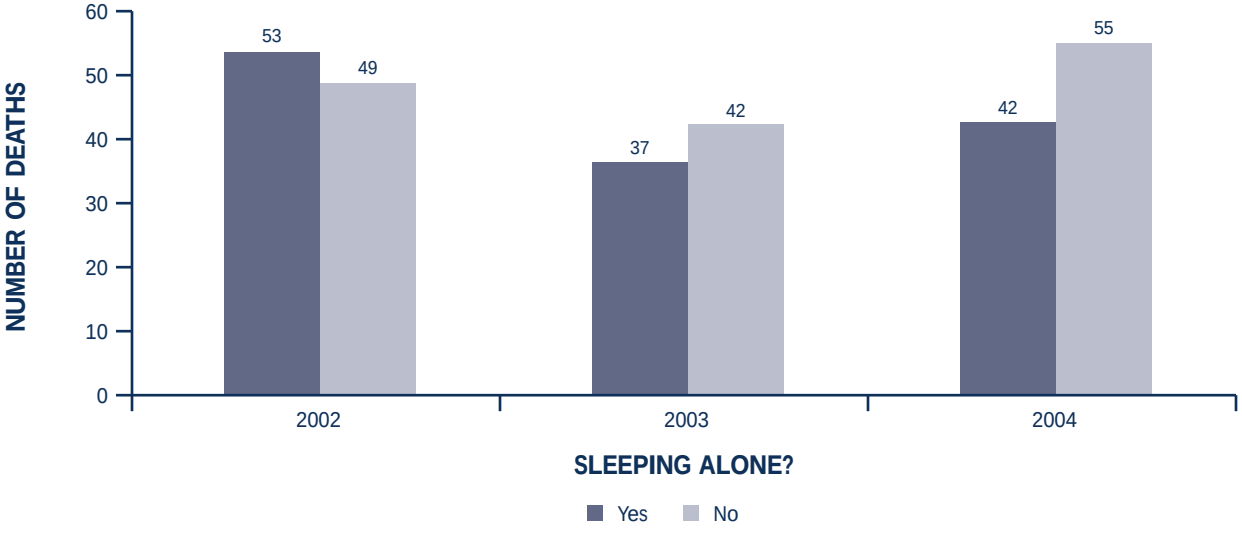
UNDETERMINED BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	6	8	6	WHITE	15	13	16
MALE	12	8	11	BLACK	2	2	1
				OTHER	1	1	
	18	16	17		18	16	17

UNDETERMINED - UNDER 1 YEAR OF AGE BY AGE IN MONTHS



There is a growing body of evidence that bed-sharing poses a strong risk for sudden, unexpected death in infants, because of the danger of suffocation in soft bedding and overlay. CFRP Data Form 2 contains specific questions about the sleep arrangements of infants diagnosed as SIDS, but few details are available at this time concerning unintentional suffocation in infants and cause undetermined. The exception to this, is a question concerning whether the infant was sleeping along. The following table appears to reflect a national trend in bed-sharing that coincides with an increase in unintentional suffocation in infants placed in their parents' bed to sleep. In 2004, **nine** of the Missouri infants whose cause of death could not be determined were known to be bed-sharing at the time they were discovered.



A Safe Sleeping Environment For Your Baby

The American Academy of Pediatrics, the Consumer Product Safety Commission and the National Institute of Child Health and Human Development have revised their recommendations on safe bedding practices when putting infants down to sleep. Here are the revised recommendations to follow for infants under 12 months:

Safe Bedding Practices for Infants

- 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, bumper pads 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 with feet at the foot of the crib. Tuck a thin blanket around the crib mattress, reaching on so far as the baby's chest.
- Make sure your baby's head remains uncovered during sleep.
- Do not place baby on a waterbed, sofa, adult mattress, pillow or other soft surface to sleep.

Placing babies to sleep on their backs instead of their stomachs, has been associated with a dramatic decrease in deaths from Sudden Infant Death Syndrome (SIDS). Babies have been found dead on their stomachs with their faces, noses and mouths covered by soft bedding, such as pillows, quilts, comforters and sheepskins. However, some babies have been found dead with their heads covered by soft bedding, even while sleeping on their backs.

Risk Reduction Recommendations:

The following risk reduction recommendations are from SIDS Resources, Inc., the SIDS Alliance and the American Academy of Pediatrics.

For parents:

- *Sleep position:* Infants should be placed on their backs to sleep throughout the first year of life.

- *Sleep environment:* Do not place infants on adult beds to sleep.

- *Bedding:* Avoid soft bedding. Place baby on a firm tight-fitting mattress in a crib that meets current safety standards. Avoid placing the baby on soft quilts or comforters, sofas, pillows, waterbeds or sheepskins. Stuffed animals should not be placed in the crib with the baby. Avoid using bumper pads.

- *Temperature:* To avoid overheating, do not overdress the baby or over-bundle the baby.

- *Smoking:* Avoid smoking during pregnancy. Create a smoke-free environment around the baby after birth.

- *Breastfeeding:* Mothers should be encouraged to breastfeed. However, infants placed in adult beds to sleep are at increased risk of suffocation and overlay.

- *Prenatal Care and well-baby care.*

For community leaders and policy makers:

- *Support Safe-Sleep campaigns.*

For professionals:

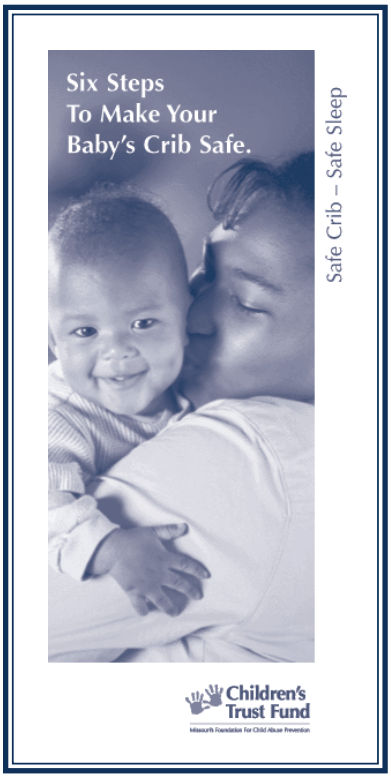
- Newborn nursery personnel, physicians, nurses and public health officials should instruct all new parents and child care personnel in safe sleeping practices and other strategies to reduce the risk of SIDS.

For Child Fatality Review Panels:

- All sudden, unexplained deaths of infants <1 year of age require autopsy by a child death pathologist and review by a county CFRP panel. The data pertaining to infant deaths is critical in identifying risk factors for SIDS and providing targeted prevention messages for parents.

Something We Can Do: The Safe Crib-Safe Sleep Campaign

The safest place for an infant to sleep is in a standard crib, on his or her back without soft bedding or toys of any kind. The American Academy of Pediatrics, the Consumer Product Safety Commission and the National Institute of Child Health and Human Development have revised their recommendations on safe bedding practices when putting infants down to sleep to incorporate this new information. Unfortunately, many parents have not received this information and, for a variety of reasons, are unable to provide a safe crib for their infant.



The Safe Crib Project provides a safe, new crib to families in need, along with critical parent education about safe sleep arrangements for infants. In communities throughout Missouri, social service agencies, community health agencies, hospitals and similar organizations have collaborated to implement the Safe Crib Project, using funding from Children's Trust Fund. The goal of this innovative project is to save infant lives and support families. For additional information about Children's Trust Fund, active Safe Crib Projects or funding opportunities, please contact Children's Trust Fund at 573-751-5147 or visit www.ctf4kids.org.

Resources and Links:

American Academy of Pediatrics Policy Statement:

Changing Concepts of Sudden Infant Death Syndrome:

Implications for Infant Sleeping Environment
and Sleep Position . . http://aapolicy.aappublications.org/cgi/content/full/pediatrics%3b105/3/650

Safe Bedding Practices for Infants:

Consumer Product Safety Commission . . . . . www.cpsc.gov

American Academy of Pediatrics . . . . . www.aap.org

SIDS Resources, Inc., 143 Grand, St. Louis, MO 63122 . . . . . .www.sidsresources.org

Counseling and support, research, training and education throughout Missouri. 800-421-3511

Children's Trust Fund www.ctf4kids.org

"Safe Crib-Safe Sleep" Campaign 573-751-5147

Sudden Unexpected Infant Death: A Guide for Missouri Coroners
and Medical Examiners . . . . . www.dss.mo.gov/stat/suid.pdf

Motor Vehicle Fatalities

There were 135 motor vehicle fatalities among Missouri children in 2004. Of those, 86 were reviewed by CFRP panels.

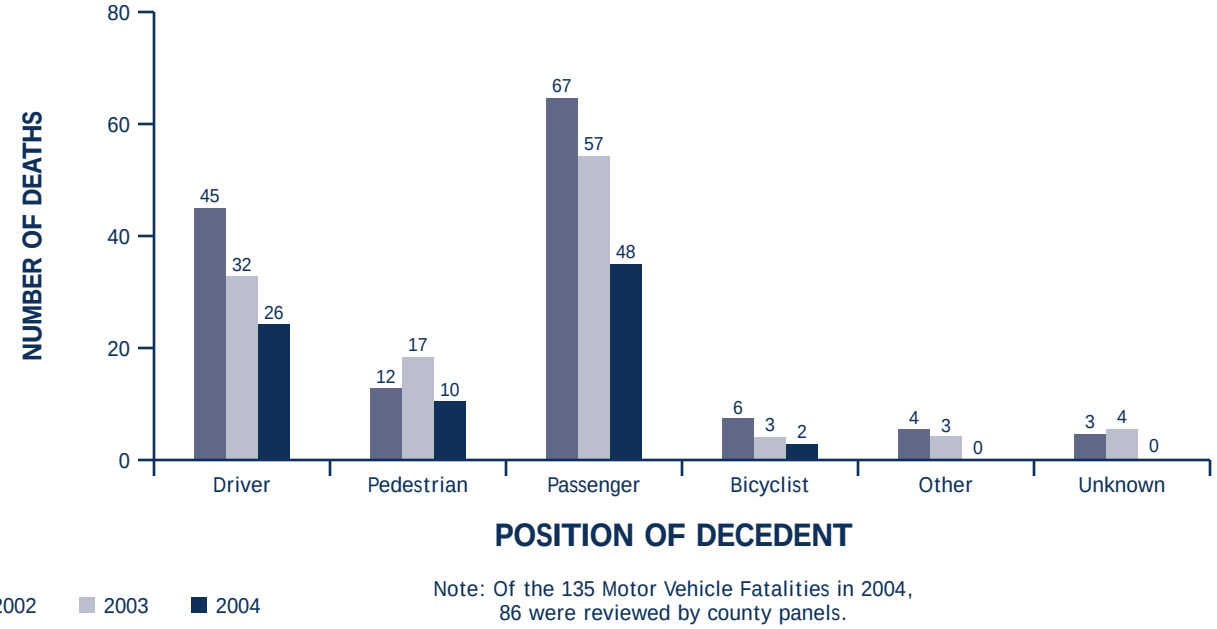
"We use the term 'crash' instead of 'accident' because we want people to realize that when cars run into each other, or run off the road and hit something or crash into something it is almost always caused by driver error - it is seldom an 'accident'."
- Missouri State Highway Patrol

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 **135** motor vehicle deaths among Missouri children in 2004, **114** were reported to the Child Fatality Review Program; **86** (75%) were reviewed by county panels.

ACCIDENTAL MOTOR VEHICLE FATALITIES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	57	60	51	WHITE	115	127	99
MALE	80	87	63	BLACK	20	19	13
				OTHER	2	1	2
	137	147	114		137	147	114

MOTOR VEHICLE FATALITIES BY POSITION AT TIME OF INJURY (AS REPORTED BY CFRP)



Note: Of the 135 Motor Vehicle Fatalities in 2004, 86 were reviewed by county panels.

Motor Vehicle Fatalities as Reported on CFRP Data Form 2

TYPE OF VEHICLE			
Car	50	ATV	5
Truck/RV/Van/SUV	17	Not Applicable	10
Bicycle	2	Not Answered	2

CONDITION OF ROAD	
Normal	53
Loose Gravel	4
Wet	15
Ice or Snow	4
Other	1
Unknown	3
Not Answered	6

RESTRAINT USED	
Present, Not Used	27
None in Vehicle	1
Used Correctly	20
Used Incorrectly	1
Unknown	19
Not Applicable	13
Not Answered	5

PRIMARY CAUSE OF ACCIDENT	
Speeding	14
Carelessness	17
Mechanical Failure	1
Weather	7
Driver Error	25
Other	13
Unknown	4
Not Answered	5

ALCOHOL AND/OR OTHER DRUG USE	
Decedent Impaired*	4
Driver of Decedents Vehicle Impaired	13
Driver of Other Vehicle Impaired	7
Not Applicable	51
Not Answered	11

*NOTE: In two cases, decedent was the driver of the vehicle.

HELMET USE	
Helmet Worn	2
Helmet Not Worn	7
Not Applicable	66
Not Answered	11

Driver and Passenger Fatalities

Representative Cases:

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

  A two-year-old child was riding in the back seat of a car driven by her mother. The child was not restrained and there was no child safety seat present. The mother, who was driving at a high rate of speed, lost control of the vehicle and struck a tree. The child was ejected and died at the scene.

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

  A 15-year-old was riding in a car driven by a 17-year-old friend. As the car approached an intersection, where the asphalt road continued as a gravel road, the driver lost control. The passenger, who was not restrained, was partially ejected through the open window, as the vehicle overturned. The vehicle was traveling too fast for foggy conditions. Alcohol was found in the car.

Of the **86** reviewed motor vehicle deaths in Missouri in 2004, **74** (86%) 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. **Twenty-two** of the child passenger fatalities in Missouri in 2004 were known to be riding unrestrained. 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 **86** reviewed motor vehicle fatalities reviewed in 2004, **15** involved a driver of decedent's vehicle impaired by alcohol. **Eight** of those fatalities involved a teen riding with a driver who was impaired; **2** involved a teen driver impaired by alcohol; and **7** 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 fatal motor vehicle injury by as much as 45%. There is a low rate of seatbelt use among teens. **Fifty-one** (59%) of the reviewed motor vehicle fatalities among children in Missouri in 2004 were teenagers age 15-17. Of those **21** (41%) were known to be unrestrained at the time of the crash; **15** were passengers and **six** were drivers.

Pedestrian Fatalities

Representative Cases:

- **Young children require constant supervision.**

  A five-year-old child got off her school bus, along with several other children. He dropped his lunch box and bent down to pick it up, so that he was out of view of the driver. The bus ran over the child.

  A nine-year-old child was chasing her dog. When she ran into the street, she was struck by a car. She died at the hospital a short time later.

  A father was backing his pick-up truck out of the driveway and ran over his one-year-old toddler.

Of the **86** reviewed motor vehicle fatalities among Missouri children in 2004, **10** were pedestrians. **Four** of those were age 4 and under; **3** 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 10-year-old was riding a bicycle on a busy street, when he was struck by a car. He died on the way to the hospital. He was not wearing a helmet.

  A 16-year-old was riding a bicycle down a sidewalk. When a truck turned into a parking lot, the teen ran into the side of the truck. He died of head injuries at the hospital.

Motor vehicle fatalities among Missouri children also include **2** bicyclists who died in 2004, when they were either struck by a motor vehicle or fell. **Both** of those fatalities were reviewed by local panels. Neither 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.**

  An eight-year-old child was riding as passenger on an ATV driven by her adult sister. The adult driver lost control of the ATV on a gravel road and overturned. The child, who was not wearing a helmet, died of severe head injuries.

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

  A 13-year-old was riding an ATV in a farm field, checking on cattle with his grandfather. He was not wearing a helmet. When he drove into a dry creek bed, he lost control and the ATV flipped over, landing on top of him. He died a short time later.

Five of the **86** reviewed motor vehicle fatalities reviewed in 2004, involved all-terrain vehicles. Only **one** of those five children was 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 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.dcd.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 an increased risk for injury and death.

The Centers for Disease Control (CDC) examined injuries and fatalities among children involved in non-traffic, 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 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.

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

Unintentional Suffocation/Strangulation, Children Age 1 year and older

Unintentional Suffocation/Strangulation was the cause of death of 8 Missouri children, age one year and older.

Representative Cases:

- **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.**

  A one-year-old child was at home with his father and stepmother on a scheduled visitation. While the father was at work, the stepmother put the child to bed and watched television, while talking on the phone. Later, when she checked on the child, she found him unresponsive. During the autopsy a penny was found lodged in the child's upper airway.

  A one-year-old toddler fell asleep in the car on the way home with his parents. In order to avoid waking him, they placed him on a couch in the living room and went to bed. When the parents awoke the next morning, they child was not on the couch. He was eventually found unresponsive in a box full of clothes in his parents' bedroom. He had apparently climbed up on a storage container and fallen into a cardboard box filled with winter clothing. He had become wedged head down in the clothing and suffocated.

  A 10-year-old child was standing on top of a trailer full of soybeans that was being unloaded into a storage bin. He was suddenly caught in the flow of the discharged beans, dragged down beneath the bean flow. Frantic rescue efforts by several adults proved futile and the child suffocated.

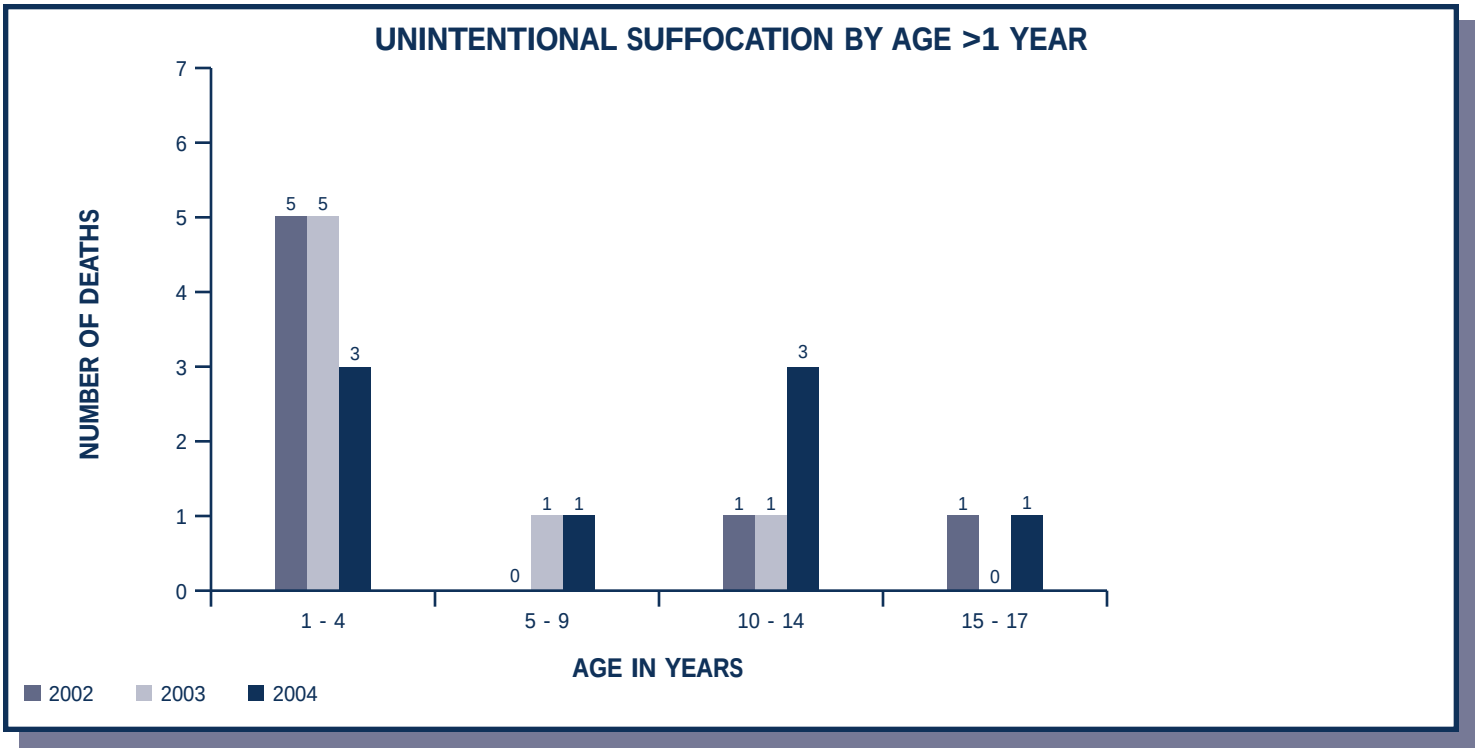
Note: The suffocation/strangulation deaths as reported in this section are unintentional. Suffocation/strangulation deaths may also be intentional, inflicted by others (homicide), self-inflicted (suicide) or of an undetermined manner.

Airway Obstruction Injuries Among Young Children: Choking, Suffocation and Strangulation

The majority of airway obstruction injuries occur among infants less than one year of age. Of those, it is estimated that 60% of infant suffocation occurs in the sleeping environment. Sleep-related deaths of infants <one year are presented in the section entitled "Sudden, Unexpected Infant Deaths." The focus of this section is unintentional airway obstruction injuries that occur among toddlers and young children.

Airway obstruction 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 put them at greater risk. *(Safe Kids)*



UNINTENTIONAL SUFFOCATIONS BY SEX AND RACE >1 YEAR

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	4	3	0	WHITE	4	7	7
MALE	3	4	8	BLACK	3	0	1
	7	7	8		7	7	8

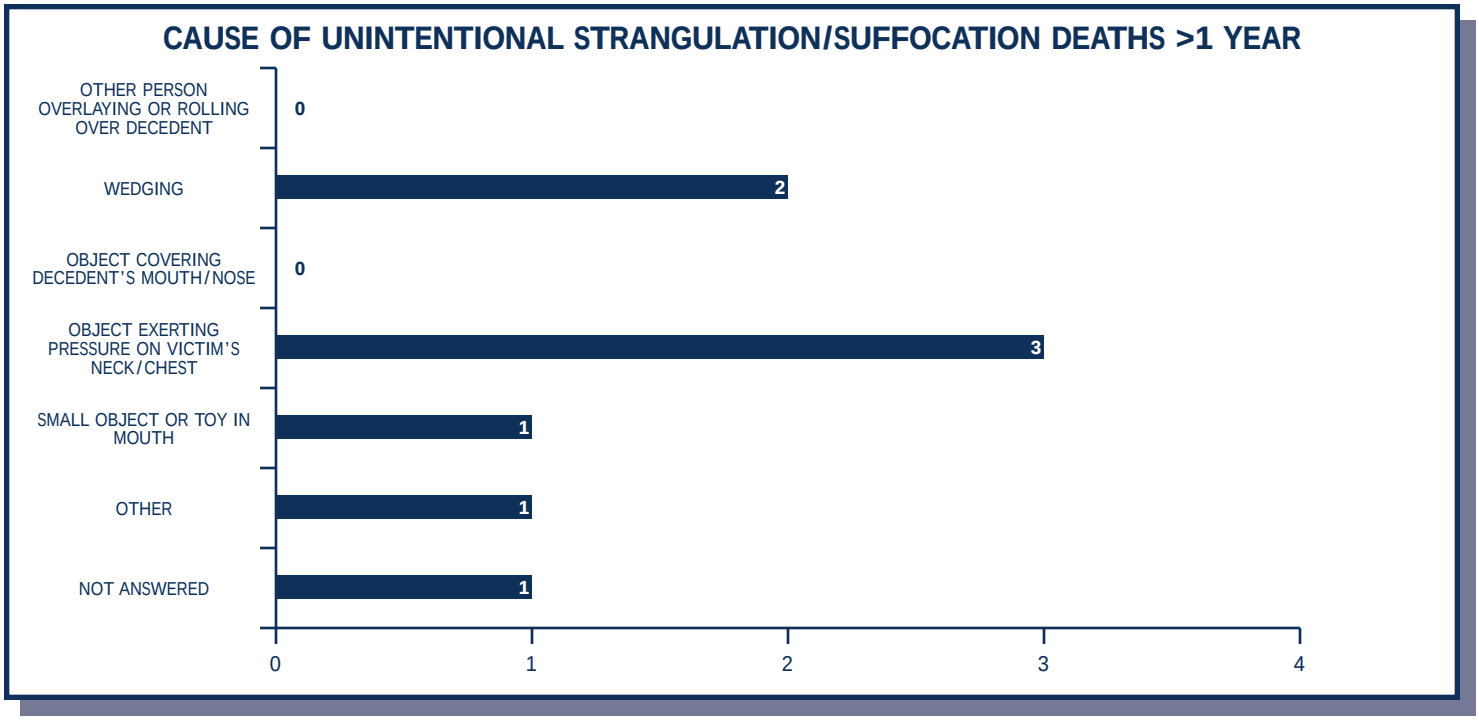
In Missouri, in 2004, **eight** children over the age of one year died of unintentional airway obstruction injuries. Of those, **three** were young children under the age of four years and **three** were ages 10-14.

The majority of childhood choking injuries are associated with food. Young children are at risk from choking on small, round foods such as hot dogs, candies, nuts, grapes, carrots and popcorn. Children can easily choke or aspirate small objects, most often toys, beads, balloons and coins.

Airway obstruction injuries can also result from entanglement or entrapment that result in strangulation and/or suffocation. In the United States, since 1991, at least 130 children have strangled on window covering cords that occurred when the cord was hanging near the floor or crib. In the last twenty years, at least 22 children in the United States have died from entanglement of clothing drawstrings.

The head of a toddler or young children is disproportionately large in relation to the size of the body. Young children strangle in openings big enough for parts of their bodies, but too small for their heads. These include spaces in bunk beds, cribs, playground equipment, strollers, and high chairs. Fortunately, several safety laws and regulations help to protect children from consumer product-related suffocation/strangulation injuries. *(Safe Kids)*

Young children can also become entrapped or wedged in a small space, such as between a bed or mattress and a wall. They can also become entrapped in airtight spaces, such as a cedar chest or unused refrigerator or freezer. In Missouri, in 2004, two children died when they became wedged. A one-year-old became wedged between a toy box and the wall, while his father was in the shower. Another one-year-old climbed onto a container and fell into a cardboard box filled with clothing, where he became wedged head down and suffocated.



Prevention Recommendations:

- 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 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 Organization . . . . . www.safekids.org
American Academy of Pediatrics . . . . . www.aap.org
Missouri Children's Trust Fund, "Safe Crib-Safe Sleep" Campaign www.ctf4kids.org

Fire/Burn Fatalities

Fire/Burn injuries were the cause of 24 deaths of Missouri children in 2004.

Representative Cases:

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

  A five-year-old child died in a fire that was apparently started by a three-year-old sibling. The younger child had awakened during the night and began playing with a lighter left in the living room near the sofa. When the sofa began to smolder and caught fire, he became frightened and ran to his parent's bedroom. The fire spread quickly. The five-year-old died of smoke inhalation.

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

  A three-year-old child and two adults die in a fire that started when a pan was left on the stove, as the family went to bed. Smoke alarms were present and functional, but failed to warn the victims, because they were mounted to low on the walls.

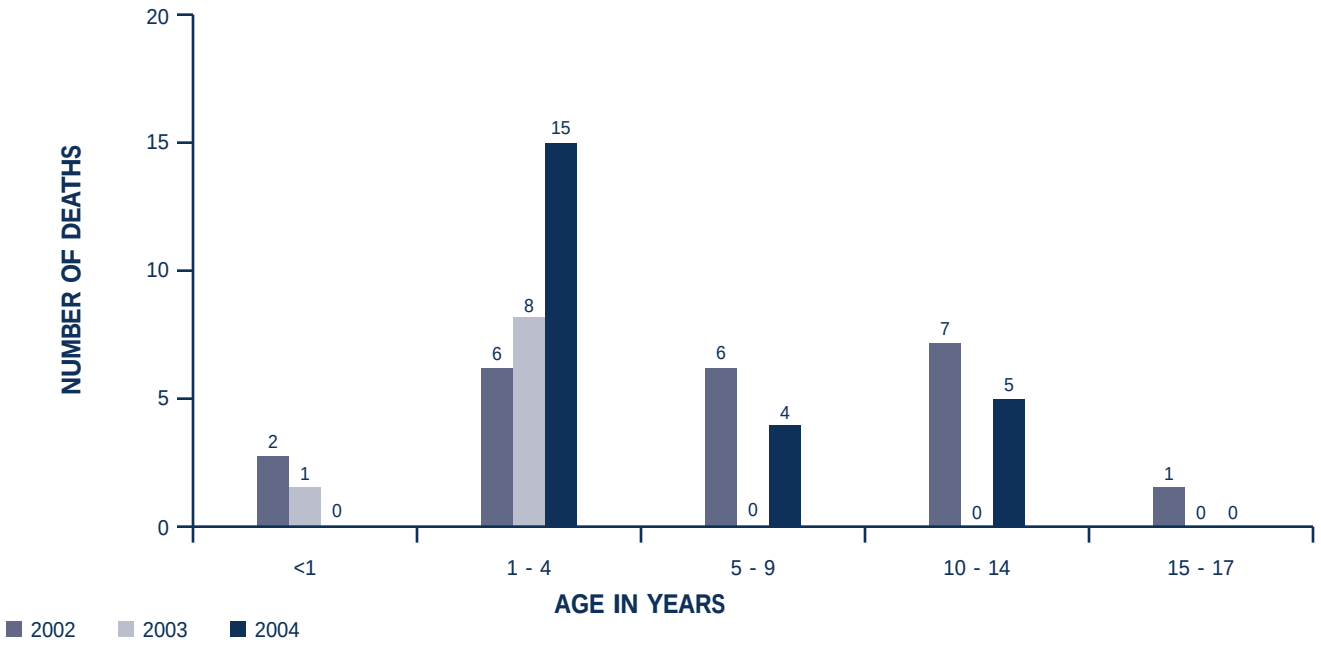
- **Plan and practice several fire escape routes from each room of the home and identify an outside meeting place. Practicing an escape plan may help children who become frightened, and confused in a fire to escape to safety.**

  A four-year-old child, his mother and an older sibling all perished in a fire involving a two-story house. All were dressed in night clothes. They were found huddled near a window in a second-floor bedroom.

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, **24** children died as a result of unintentional fire/burn injury in 2004; **15** 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, 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)*

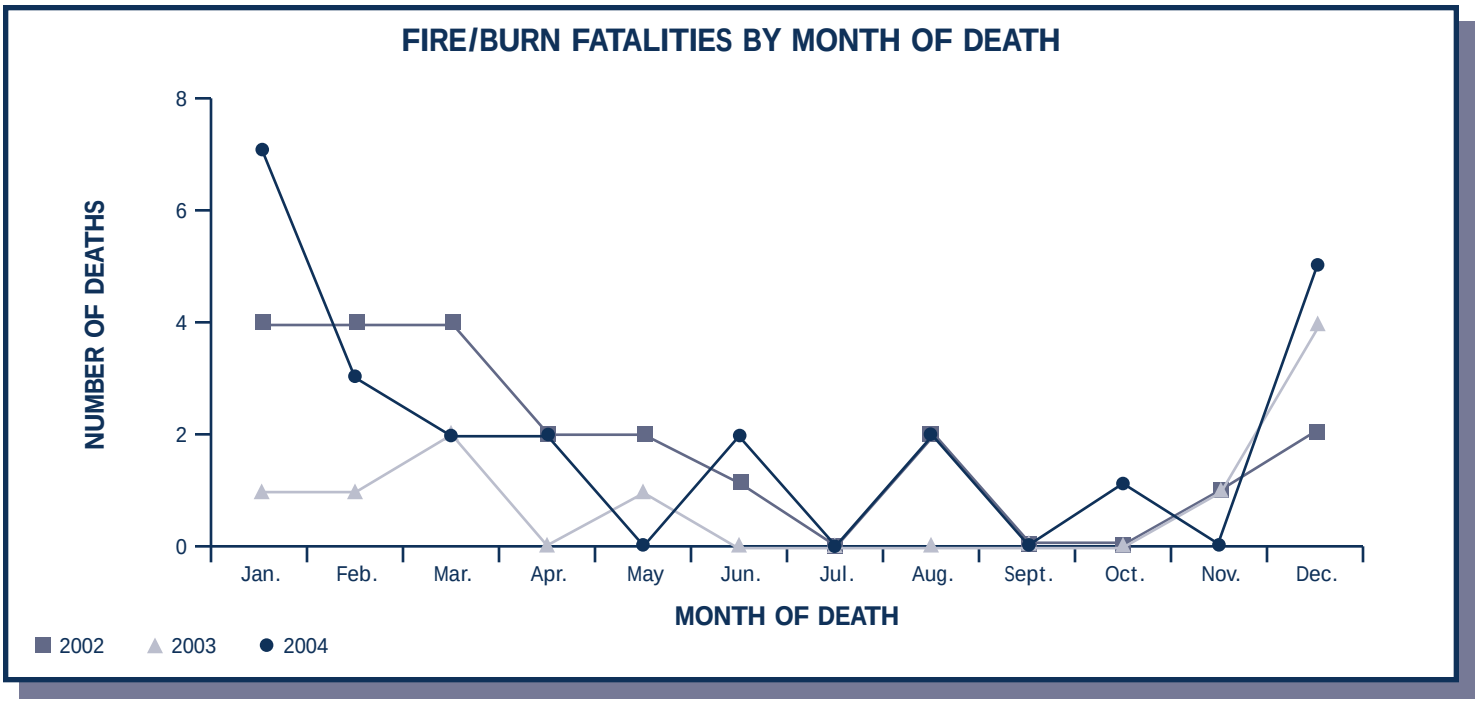
FIRE/BURN DEATHS BY AGE



FIRE/BURN DEATHS BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	7	4	13	WHITE	14	6	21
MALE	15	5	11	BLACK	6	3	3
				OTHER	2	0	0
	22	9	24		22	9	24

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



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 **24** fatal Missouri fires reviewed by county CFRP panels in 2004, of those, **4** 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 area 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 2004, **3** children are known to have died in fires started by other children playing with matches or lighters.

Juvenile Firesetting

In Missouri in 2004, **three** children were known to have started a fire in their home by playing with a lighter. 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 parent 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	
Yes	6
No	5
Unknown	8
Not Applicable	1
Not Answered	4

SMOKE ALARM IN WORKING ORDER	
Yes	4
No	4
Unknown	8
Not Applicable	3
Not Answered	5

FIRE STARTED BY	
Decedent	2
Other	3
No One	8
Unknown	8
Not Answered	3

ACTIVITY OF PERSON STARTING FIRE	
Playing	3
Suspected Arson	2
Unknown	3
Not Applicable	12
Not Answered	4

SOURCE OF FIRE	
Matches	1
Lighter	3
Combustibles	1
Faulty Wiring	2
Other	11
Unknown	5
Not Answered	1

MULTIPLE FIRE DEATHS	
Yes	17
No	5
Not Answered	2

FOR A STRUCTURE FIRE, WHERE WAS THE DECEDENT FOUND?	
Hiding	3
In Bed	6
Close to Exit	1
Other	10
Not Answered	4

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 9 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 for fresh batteries and providing fire safety information. Media attention for these events helps spread the prevention message.

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 making 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 pursing 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.dfs.dps.mo.gov
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

In 2004, 19 children drowned in Missouri.

Representative Cases:

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

  A two-year-old child was camping with his family near a lake. He was placed in a child's "duck" float ring by his mother, who could not swim. Without warning a wave pulled the child into deeper water where he could not touch the bottom and his mother could not reach him. He slipped out of the float, went under the water and drowned.

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

  A six-month-old infant was placed in a bath chair in the tub, as her mother began filling the tub with water. She left the child unattended for approximately 2-3 minutes, while she retrieved a baby bottle. When she returned, she found the baby on her side with her face in the water.

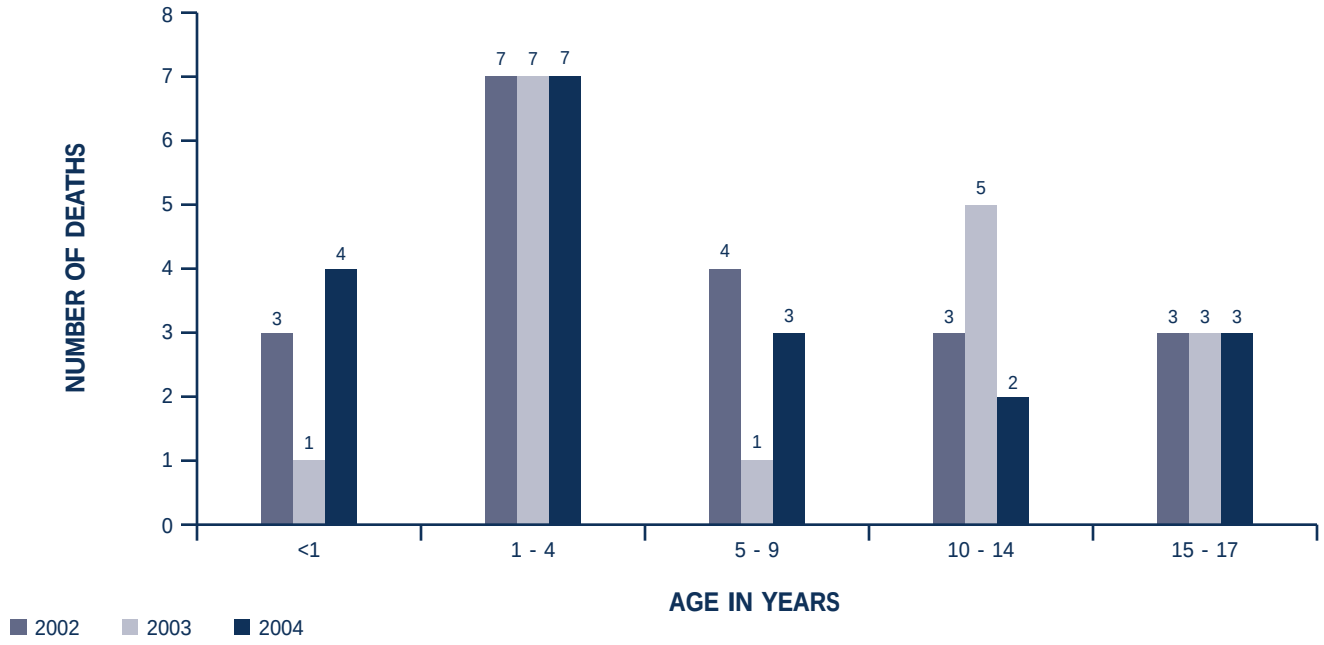
  A father left his 11-month-old child in the bathtub with a three-year-old. When he returned to the bathroom, he found the baby face down in the water.

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

  An elderly woman was left in charge of a six-year-old child who was mentally disabled due to a brain injury in infancy. The child apparently roamed away from the house and entered the farm pond, approximately 100 yards from the house. A search of the property eventually revealed that he had drowned.

In the United States, drowning is the second leading cause of unintentional injury-related deaths among children, taking more than 2,000 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 **19** Missouri children who drowned in 2004, **11** (47%) were age 4 and under; **4** of those were infants under the age of 1 year.

DROWNING DEATHS BY AGE

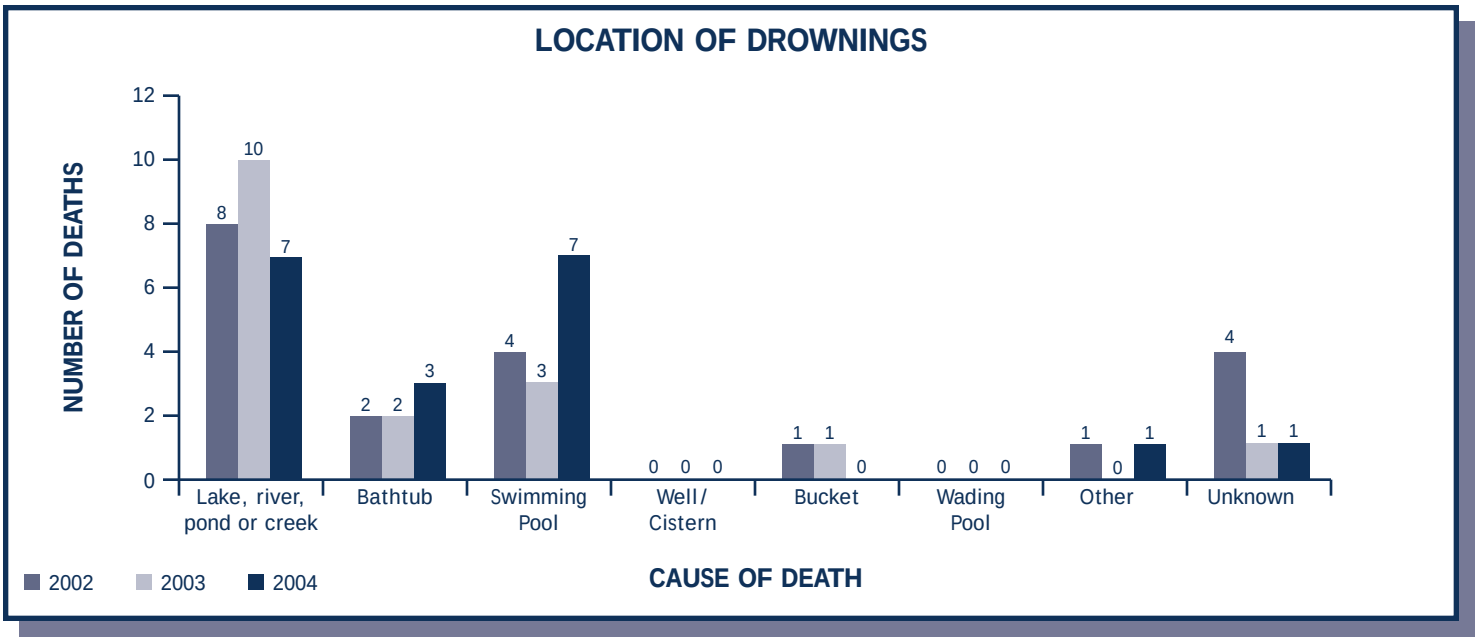


DROWNINGS BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	7	4	10	WHITE	15	16	16
MALE	13	13	9	BLACK	5	1	3
	20	17	19		20	17	19

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 **19** Missouri children who drowned in 2004, **7** (37%) occurred in swimming pools, **7** (37%) occurred in open water sites.

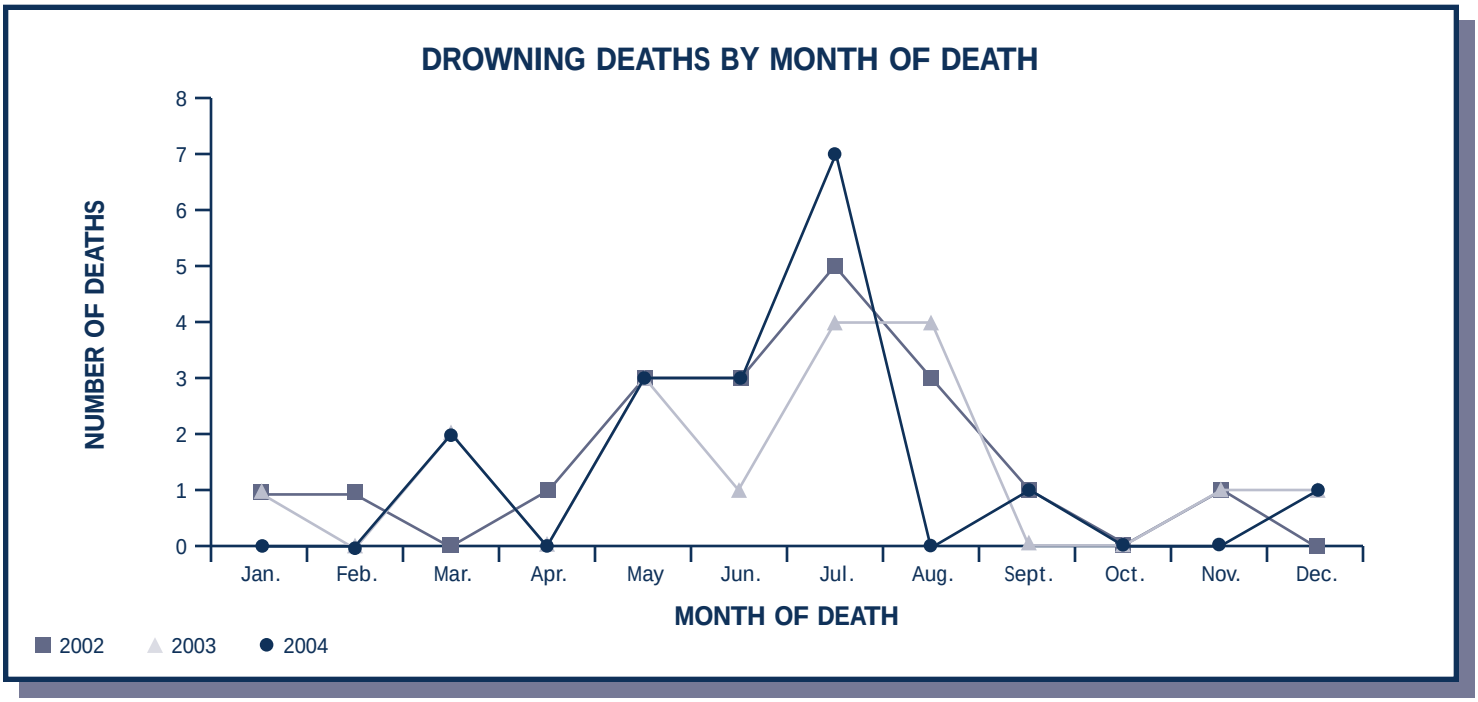


Drowning Deaths Among Children

- Supervision of children in and around water is critical. Of the **19** drowning fatalities in 2004, in which supervision of the child victim was a consideration, panels found that **12** (63%) had entered the water unattended.

- Use of a personal flotation device is well established as an effective means to prevent drowning deaths. Only **one** of the Missouri children who drowned in 2004, was 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.



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

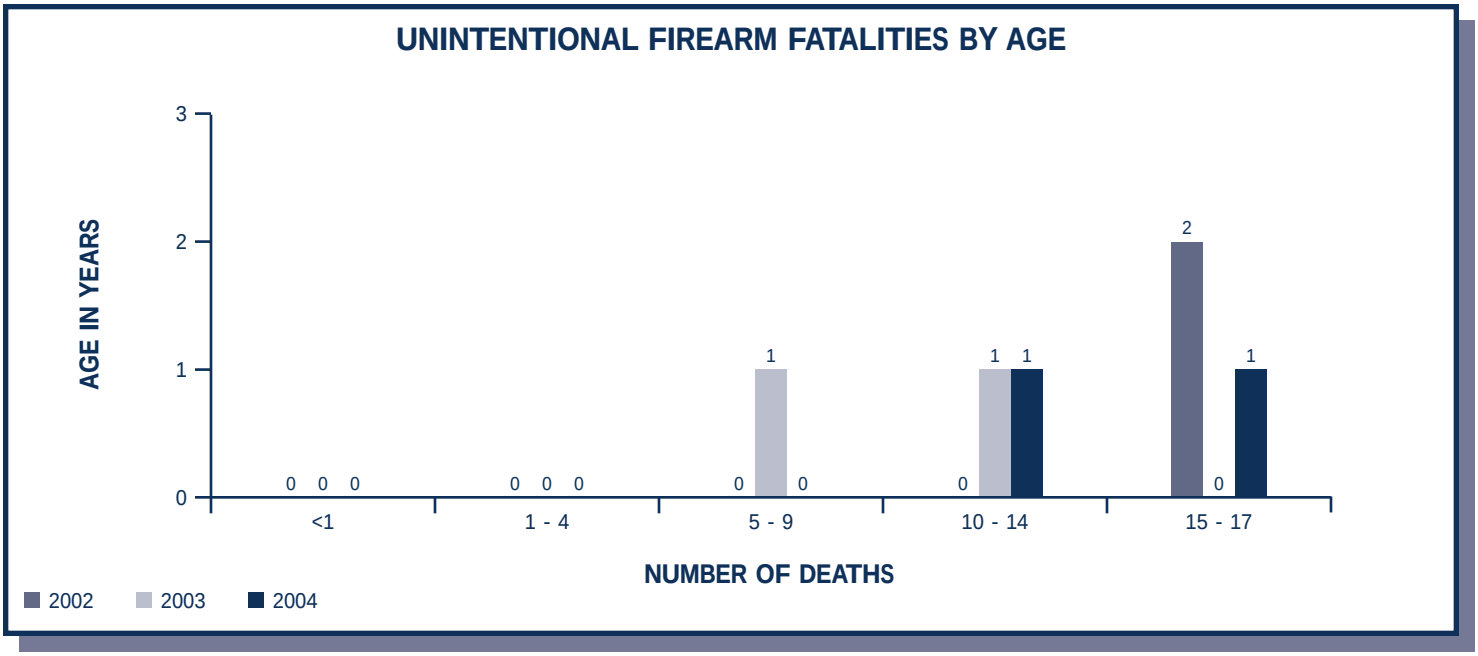
In 2004, two Missouri children died of unintentional firearm injuries.

Representative Cases:

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

  A fifteen-year-old was emptying rounds from a 270 bolt-action deer rifle, when it went off. His 11-year-old cousin suffered fatal gunshot wound to the heart.

  A 17-year-old male was shot at close range by another student, during practice at a rifle range. An instructor was present, but not in the immediate vicinity.



Boys are for 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. **One** of the unintentional firearm deaths among Missouri children in 2004, was male and **one** was female.

Nationally, more than 70% of the unintentional firearm shooting involve handguns.

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 the 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

HOMICIDES

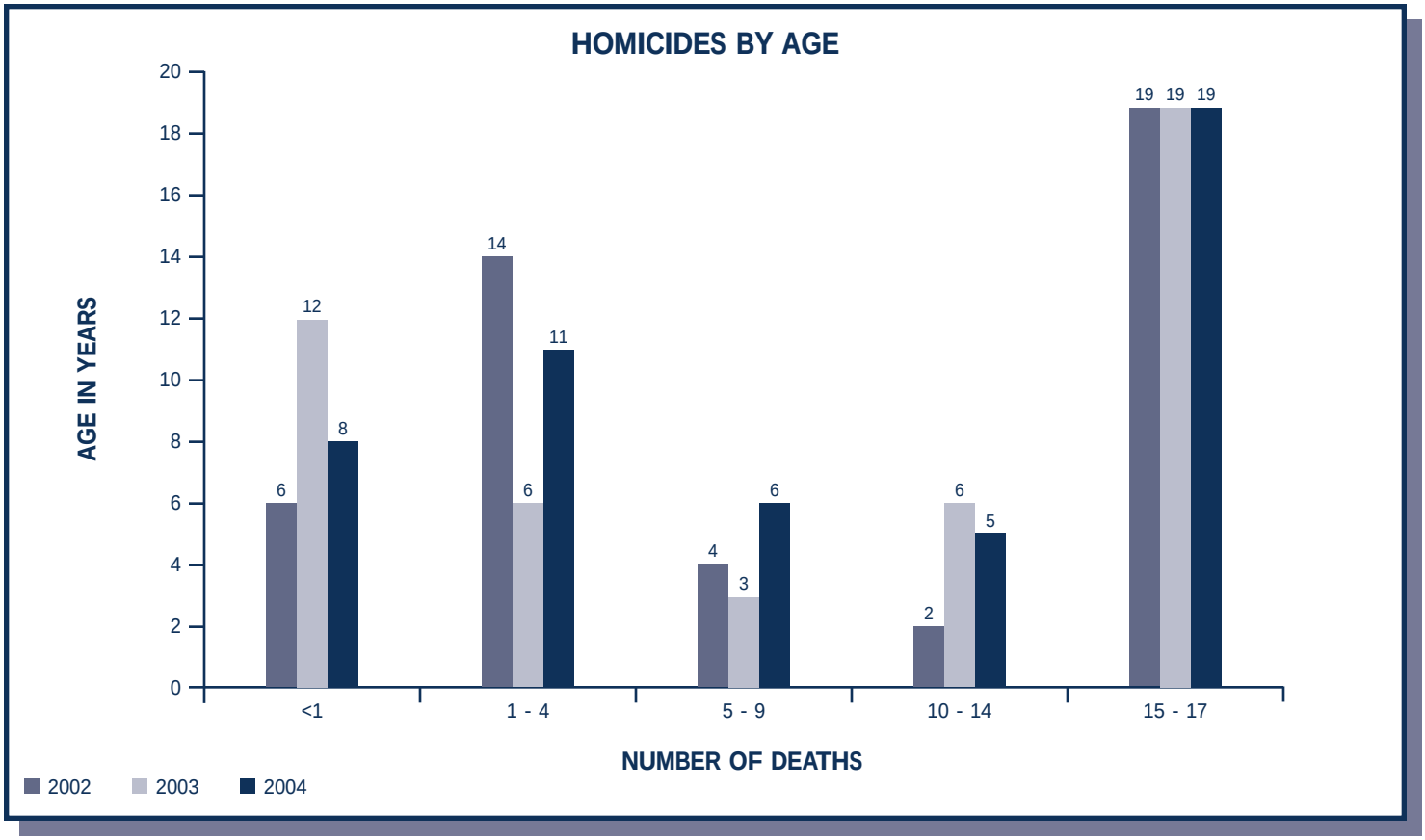
Homicide was listed as the death certificate manner of death for 49 Missouri children in 2004.

Homicide occurs when death results from a volatile act committed by another person to cause fear, harm, or death. Intent to kill is a common element, but is not required for classification as homicide. For the purpose of analysis of child deaths and their prevention, homicides are divided into three categories, based on the relationship of the perpetrator to the victim:

1. **Fatal Child Abuse and Neglect: Child death resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent.** This includes, but is not limited to, children whose deaths were reported as *homicide* by death certificate. In 2004, **70** Missouri children were victims of Fatal Child Abuse and Neglect; of those, **26** were reported by death certificate as homicide.

2. **Death of a child in which the perpetrator was not in charge of the child.** This most often includes youth homicides, such as gang-related or drug-related shootings and child abductions that culminate in murder. There were **23** such fatalities among Missouri children in 2004.

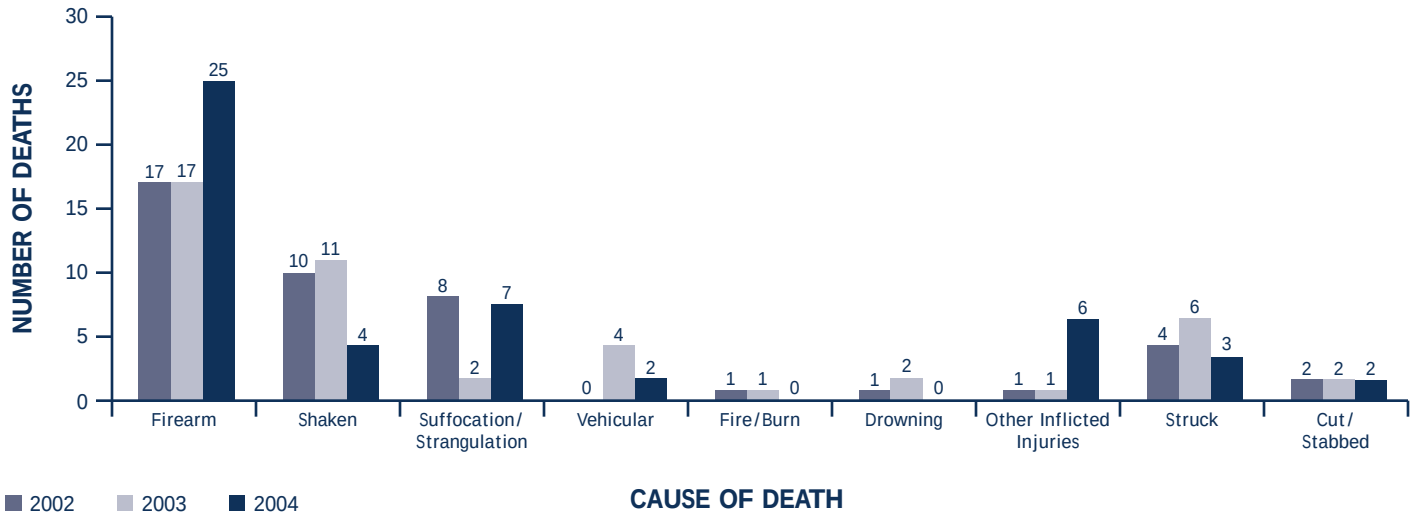
3. **Deaths of children in which the perpetrator, not in charge of the child, or negligent behavior and the child was not an intended victim.** Examples most often include motor vehicle-related deaths involving drugs, alcohol and other criminal behavior. In 2004, there were **no** homicide deaths of this type among Missouri children.



HOMICIDES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	19	13	19	WHITE	24	25	20
MALE	26	33	30	BLACK	20	21	29
				OTHER	1		
	45	46	49		45	46	49

HOMICIDES BY CAUSE



Fatal Child Abuse and Neglect

In 2004, 70 Missouri children were victims of Fatal Child Abuse and Neglect. Of those, 26 were reported as homicide by death certificate.

Representative Cases:

- **Young children are more likely to die from abuse and neglect.**

  A one-year-old child with a history of asthma was coughing and wheezing. His mother put him in a stroller in the bathroom, turned on the hot water and left for 15 minutes. When she returned, the child was face down in the water with the stroller on top of him. It was determined that the account, in way, explained the child's injuries and the death was determined to be asphyxia/homicide.

  A 4-month-old infant was found unresponsive by his babysitter, who called 911 and claimed that she could not awaken him from a nap. Her suspicious behavior toward the 911 operator and investigators, along with suspicious finding at autopsy, prompted law enforcement to question her further. She eventually admitted to smothering the child with a pillow.

- **Multidisciplinary teams should be developed, supported and trained on the local level to investigate serious offenses against children.**

  An 11-year-old child was under hospice care for an acute illness, when she was found unresponsive. This initially appeared to be a natural death, but an active case with the Children's Division based on withholding medications, lack of supervision and giving inappropriate drugs prompted further investigation. Autopsy revealed acute intoxication with morphine and chlorahydrate.

  The family of a one-year-old child has several prior contacts with the Children's Division and a history of family violence. She was left in the care of a teenage boyfriend of an aunt, who lived in the home. The child was found dead and autopsy revealed that she had died of blunt force head trauma. The teen confessed to shaking and slamming her head against the arm of a couch.

- **Parents and caretakers must be educated about the dangers of shaking and ways to cope with crying infants.**

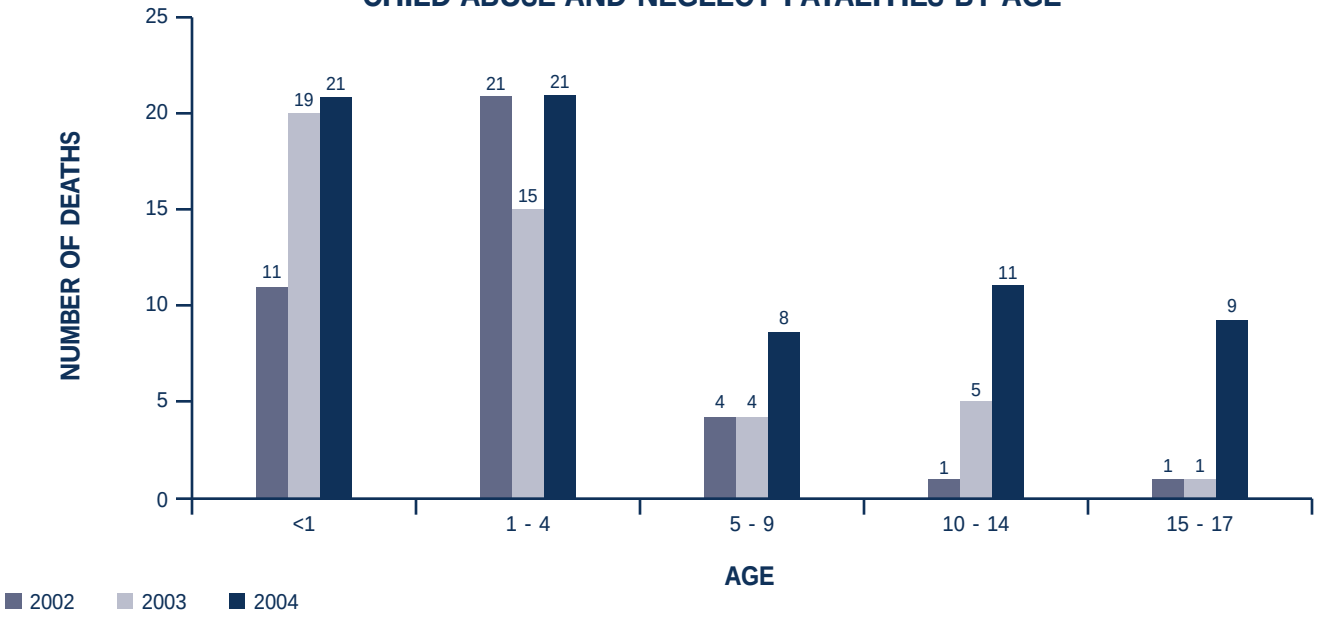
  The stepmother of a three-year-old child apparently became enraged with the child and began banging the child's head on the floor. She later admitted grabbing the child by the shoulders and shaking her violently, striking her head on the floor three times, in the process. Within a short time, the child began having seizures, lost consciousness, and developed breathing problems. There were several prior Hotline reports.

  A seven-month-old infant was in the care of her mother's boyfriend while the mother slept. When the mother awoke, the baby was unresponsive. She was rushed to the emergency room, where she was DOA. Bruising was beginning to appear around the ears, face and buttocks. The boyfriend claimed that he went to get a diaper and the baby fell off the couch. Autopsy revealed skull fracture and massive hemorrhage, consistent with Shaken Baby Syndrome.

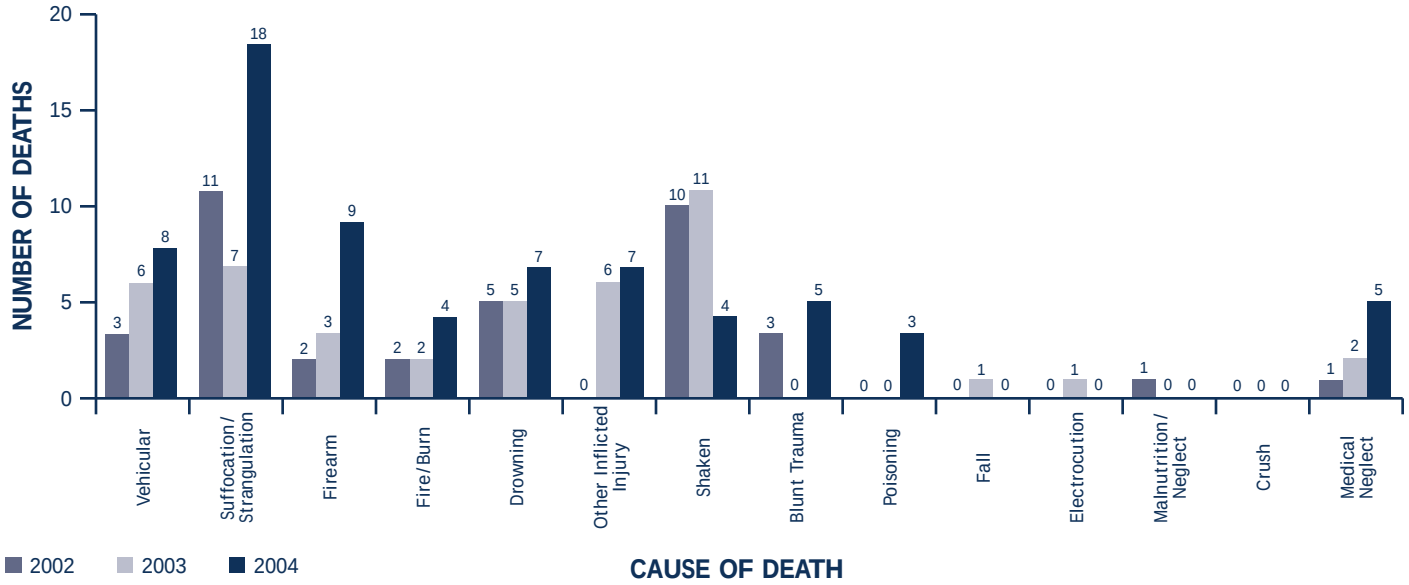
CHILD ABUSE AND NEGLECT FATALITIES BY AGE AND SEX

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	16	16	32	WHITE	27	32	48
MALE	22	28	38	BLACK	10	12	22
				OTHER	1		
	38	44	70		38	44	70

CHILD ABUSE AND NEGLECT FATALITIES BY AGE



CHILD ABUSE AND NEGLECT DEATHS BY CAUSE



Child fatalities are the most tragic consequence of child abuse and neglect. In the United States, approximately 1,200 children die of abuse or neglect each year, according to vital records (NCAN-DS). However, it is well documented that child abuse and neglect fatalities are under-reported and that, nationally, at least 2000 children die each year at the hands of their parents or caretakers. Some estimates are as high as 3-5,000. (Ewigman et al., 1993; Herman-Giddens et al., 1999) There are a number of reasons for the discrepancies and some of the fundamental problems are highlighted in this section. The Centers for Disease Control has funded an effort to develop a standardized national surveillance system capable of accurately reported child abuse and neglect families. On a state level, properly organized and functioning child fatality review systems have improved the accuracy of child death reporting.

In Missouri, there are three entities within state government responsible for child fatality information: **Department of Health and Senior Services' Bureau of Vital Statistics, Department of Social Services, Children's Division** and **Child Fatality Review Program.** All three exchange and match child fatality data in order to ensure accuracy throughout the system. However, the Bureau of Vital Statistics, Children's Division and the Child Fatality Review Program serve very different functions and, therefore, different classifications and timing periods apply when child fatality data is reported.

Vital Statistics and Death Certificate Information

The death certificate is issued for two major purposes. One is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that death has occurred, but not as legal proof of the cause of death. The second major purpose of the death certificate is to provide information for mortality statistics that may be used to assess the nation's health, causes of morbidity and mortality, and developing priorities for funding and programs that involve public health and safety issues.

Death certificate information is widely recognized as inadequate as a single source for identification of child abuse and neglect deaths. Misidentification of deaths may occur, because of inadequate scene investigation or autopsy procedure, inadequate investigation by law enforcement or child protection, or misdiagnosis by a physician or coroner. Child abuse and neglect fatalities often mimic illness and accidents. Neglect deaths are particularly difficult to identify, because negligent treatment often results in illness and infection that can be attributed to natural causes.

Children's Division: Child Abuse/Neglect Fatalities

In Missouri, the Children's Division is the hub of the child protection community. Since August 2000, all child deaths are reported to the Children's Division Central Registry. Any child not dying from natural causes, while under medical care for an established natural disease, is brought to the attention of the division by the coroner or medical examiner. A fatality report is taken and, when appropriate, the report is accepted for investigation of child abuse and neglect by the division. The Child Fatality Review Program is immediately notified of all fatality reports. The division is also responsible, if ordered by a judge, for protecting any other children in the household, until the investigation is complete and their safety can be assured.

After a report of child abuse or neglect has been made, investigations that return sufficient evidence supporting the report are classified as *probable cause child abuse and neglect.* When there is probable cause to believe that a child who has died was abused or neglected, or when this finding is court-adjudicated, that death is considered by the division to be a *probable cause child abuse and neglect fatality.* Thus, reports classified by the division as *probably cause child abuse and neglect fatalities* include deceased children whose deaths may or may not have been a direct result of the abuse or neglect. An example would be an unsupervised toddler who was run over in the driveway of her home. That death would be included as a pedestrian fatality in this CFRP Annual Report, with Inadequate Care as a contributing factor. In a case such as this, Children's Division would determine that there was *probable cause* to believe that this child was a victim of *neglect*, specifically, lack of supervision.

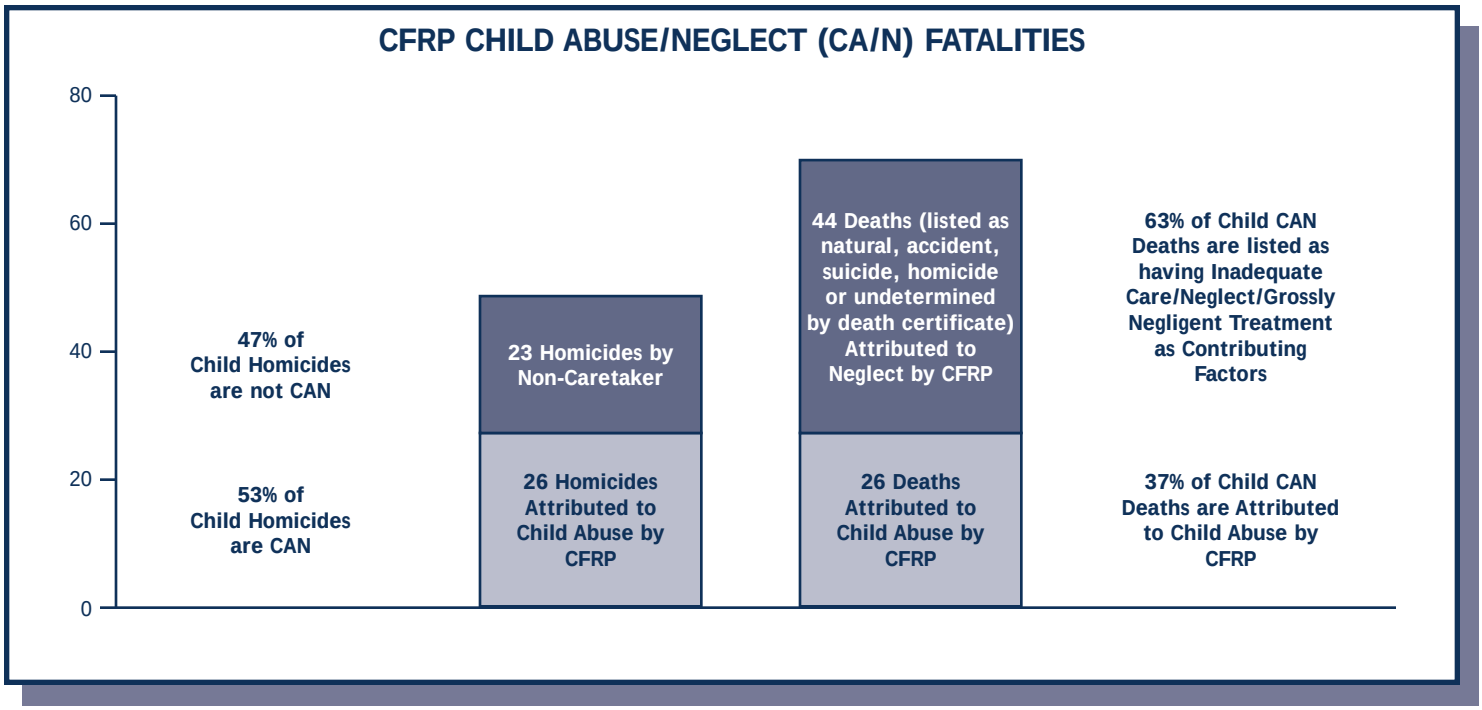
The Missouri Child Fatality Review Program: Fatal Child Abuse and Neglect

Child fatalities represent the extreme of all issues that have a negative impact on children. Despite an increasing awareness of severe violence against children, very little was known in the past about fatal child abuse and neglect. In the late-1980's, Missouri researchers discovered that many fatal child injury cases were inadequately investigated and that many children were dying from common household hazards with inadequate supervision. Many cases of fatal abuse and neglect went undetected, misclassified as natural deaths, accidents or suicides. The information necessary for a thorough investigation of a child death was distributed among agencies, which could not share records. In 1992, Missouri initiated a comprehensive, statewide child fatality review system. The CFRP review process has resulted in better investigations, more timely communication, improved training and technical assistance, and standardized data collection that allows us to understand much more about how our children die, the circumstances in which they die and who may be responsible.

Beginning in 1999, the Child Fatality Review Program Annual Reports refined the reporting and analysis of CFRP data in many ways, including an examination of data concerning "Fatal Child Abuse and Neglect." Those numbers represented a subset of child fatalities reported as *homicide* by death certificate. These changes allowed us to begin to understand much more about how Missouri children die, the circumstances in which they die and who may be responsible.

The Child Fatality Review Program defines *Fatal Child Abuse and Neglect* as child deaths resulting directly from inflicted physical injury and/or grossly negligent treatment by a parent or caretaker, regardless of motive or intent. This number includes, but is no longer limited to, children whose deaths were reported as homicide by death certificate; their death certificate manners of death may include natural, accident or undetermined. See Appendices 6 and 7 for additional information.

"Murder is no less a crime because a child, rather than an adult, is the victim."
-Unknown



Fatal Child Abuse: Inflicted Injury

In 2004, 26 Missouri children died from inflicted injury at the hands of a parent or caretakers. Of those, 18 (69%) were age 4 years or younger.

In the United States, the majority of fatal inflicted injury deaths among children result from abusive head trauma, commonly known as Shaken Baby Syndrome. In 2004, **four** of the 26 children who died from inflicted injury at the hands of a parent or caretaker were victims of abusive head trauma. This represents a dramatic reduction in the number of SBS fatalities in Missouri and may well be attributable to an aggressive statewide campaign designed to educate parents and caretakers about the dangers of shaking.

In the United States, the next most common type of physical abuse deaths involves punching or kicking the abdomen, resulting in massive internal injuries and bleeding. Infants and young children are especially vulnerable because vital organs are in close proximity to each other; the ribs are small and cannot protect vital internal organs. In 2004, **five** Missouri children died of blunt trauma injuries to the abdomen or head, when they were struck, punched, kicked or thrown.

Another common type of physical abuse death among young children, but often more difficult to detect is suffocation/strangulation. These injuries occur when hands or materials are used to block or cover external airways (suffocation) or used to exert pressure on the neck and interfere with breathing (strangulation), or pressure is exerted on the chest in order to interfere with breathing. In 2004, **six** Missouri children died of suffocation/strangulation at the hands of a parent or caretaker.

Fatal Abuse: Inflicted Injury

FATAL ABUSE INFLICTED INJURIES BY AGE	
<1 year	7
1-4 years	11
4-9 years	4
10-14 years	3
15-17 years	1

FATAL ABUSE INFLICTED INJURIES BY SEX	
Females	13
Males	13

FATAL ABUSE INFLICTED INJURIES BY RACE	
White	13
Black	13

FATAL ABUSE INFLICTED INJURIES BY CAUSE			
Shaken Baby Syndrome	4	Other - Drug Overdose	2
Blunt Trauma	5	Other - Cut/Stab	2
Suffocation/Strangulation	6	Other Inflicted Injuries	2
Firearm	5		

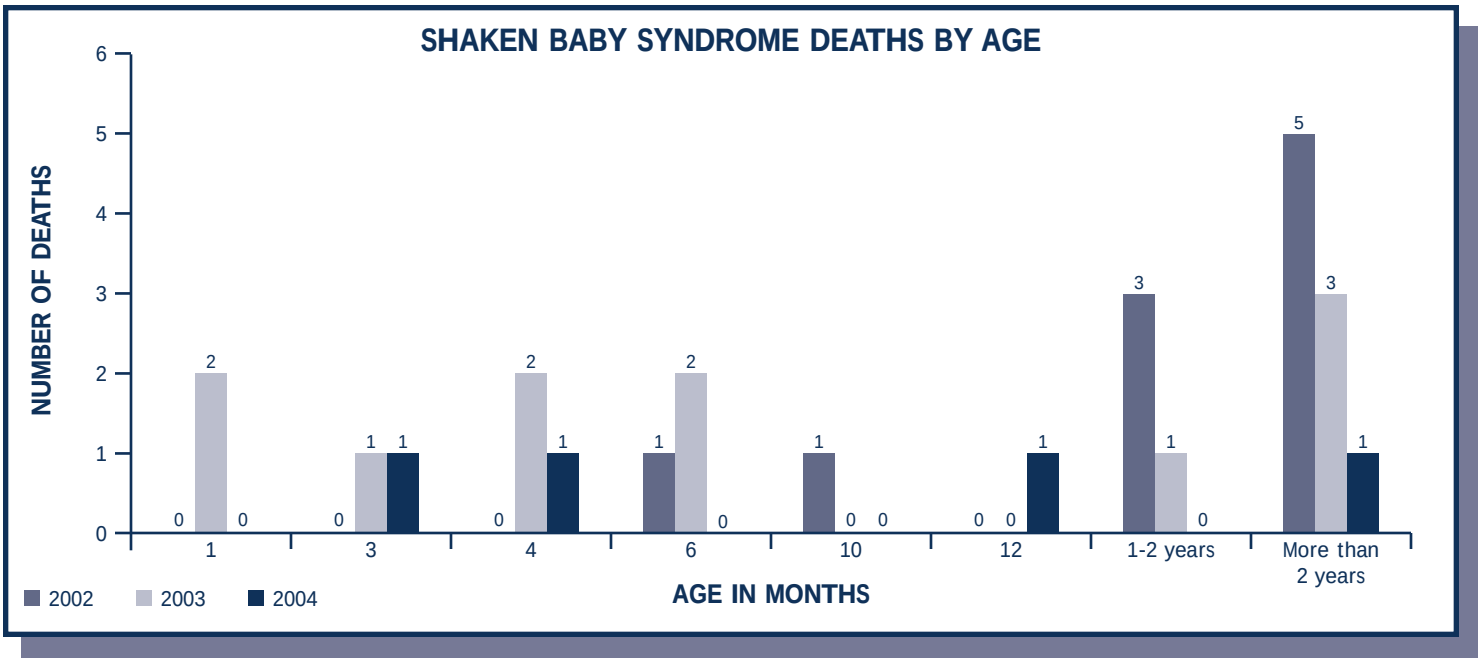
Shaken Baby Syndrome

The most common mechanism of child abuse fatalities in the United States, is abusive head trauma or Shaken Baby Syndrome (SBS), which involves the violent shaking of an infant or young child, usually under the age of 4 years. Babies' heads are large and heavy in proportion to their total body weight and their neck muscles are too weak to support such a disproportionately large head. Because a baby's brain is immature, it is more easily injured. When an infant or young child is violently shaken, the head rotates wildly on the axis of the neck, resulting in rotation of the brain within the skull. Brain tissue is bruised or destroyed.

Shaken Baby Syndrome involves an *extremely violent* act. Age-appropriate play, gentle shaking to awaken an unconscious child and CPR do not cause the massive destruction seen in Shaken Baby Syndrome. Short falls from sofas, beds and changing tables, and falls associated with the caretaker falling while carrying the child, do not produce the severe brain injuries of Shaken Baby Syndrome.

Immediate consequences include a decreased level of consciousness and seizures; breathing may stop; the heart may stop and the baby may die. Shaken Baby Syndrome is so lethal that 20-25% of SBS victims die of their injuries. Long term consequences for survivors may include physical disabilities, blindness, speech disabilities, seizures, learning disabilities and death. For survivors, research has established that a significant number of SBS cases are unrecognized and under-reported.

Of the **26** Missouri children who died of fatal inflicted injury in 2004, **four** (15%) were victims of Shaken Baby Syndrome.



SHAKEN BABY SYNDROME DEATHS BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	7	1	3	WHITE	7	9	2
MALE	3	10	1	BLACK	3	2	2
	10	11	4		10	11	4

Deliberate shaking of an infant or young child is usually the result of frustration or anger. This occurs most often when the baby won't stop crying. Other triggering events include toilet training difficulties and feeding problems.

SHAKEN BABY DEATHS BY APPARENT TRIGGERING EVENT

Cause	Number of Deaths
Crying	2
Other - Parent on Drugs	1
Not Answered	1

Perpetrators of Shaken Baby Syndrome can be anyone. Most individuals who shake infants do not fall into a specific category, yet research shows that certain characteristics make a person more at risk of being a perpetrator. For example, research has established that fathers and other male caretakers are the most frequent perpetrators of SBS. **Three** (75%) perpetrators of fatal SBS in 2004, were fathers and other male caretakers.

Perpetrator	Number of Deaths
Father	1
Mom's Paramour	2
Dad's Paramour	1

Fatal Child Neglect: Inadequate Care and Grossly Negligent Treatment

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. Parent and other 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.

Negligent treatment of a child is an act of omission, which is often fatal when due to grossly inadequate physical protection, withholding nutrition or health care necessary to preserve life. Child deaths resulting from grossly negligent treatment are frequently difficult to identify, because neglect often results in illnesses and infections that can be attributed to natural causes, or exposure to hostile environments or circumstances that result in fatal "accidents."

Definitions of negligent treatment vary depending on whether one takes a legal, medical, psychological, social service or lay perspective. There are broad, widely recognized categories of neglect that include: *physical neglect, emotional neglect, medical neglect, neglect of mental health, and educational neglect.* Within those definitions, there are subsets, as well as variations in severity that often include *severe* or *"nearly-fatal"* and *fatal.* Negligent treatment may or may not be intentional; however, the end result for the child is the same whether the parent is willingly neglectful (e.g., out of hostility) or neglectful due to factors such as ignorance, depression or overwhelming stress and inadequate support.

Grossly negligent treatment by a parent or caretaker generally involves failure to protect from harm and withholding or otherwise failing to provide food, shelter, or medical care necessary to meet the child's basic needs. This level of negligence is egregious and surpasses momentary inattention or a temporary condition; it is often part of a pattern of negligent treatment. Child deaths often result when a parent or caretaker fails to adequately supervise the child, usually for extended periods of time.

In some cases, "failure to protect from harm" or failure to meet basic needs, involves exposure to a hostile environment or a hazardous situation with potential for serious injury or death. An example would be a 3-year-old who was riding unrestrained, while his intoxicated parents were "playing chicken" with another vehicle. The child was ejected in the crash and died instantly. Another example is a toddler, put outside to play alone, who wandered out of the yard and drowned in a pond.

Medical neglect, as a form of grossly negligent treatment, refers to failure to provide prescribed medical treatment or emergency medical care for a known illness or injury with potential for a serious or fatal outcome. Examples include untreated diabetes or asthma.

In 2004, with the revision of the Data Form 2, CFRP panels were asked to consider and indicate all child fatalities in which Inadequate Care and/or Grossly Negligent Treatment contributed to the death of a child. For 2004, CFRP panels identified **44** Missouri children as victims of Inadequate Care and/or Grossly Negligent Treatment that resulted in death.

It should be noted that two of these 44 deaths were designated as homicide by death certificate. In both cases, the perpetrators were not caretakers of the children. All of the 44 deaths are included in the appropriate data sections Illness/Natural Cause, Unintentional Injury, Homicide or Suicide, according to cause and circumstances.

Total Deaths	Cause of Death	*Circumstances of Gross Negligence that Contributed to Death					Examples
		Lack of Supervision	Medical Neglect	Exposure to Hazardous Situation	Unrestrained Children	Other	
3	Illness/ Natural Cause	1	3	1	0	0	Prenatal cocaine use by mother. Untreated asthma.
8	Vehicular	2	0	3	3	3	Three children, riding unrestrained with their mother, who was under the influence of drugs. Two-year-old riding ATV with older sibling. Two children riding unrestrained with drivers impaired by alcohol.
12	Suffo-cation	6	1	2	0	5	Nine sudden, unexpected infant deaths involving unsafe sleep arrangements. Two suicides by hanging in children at high risk, left alone for extensive time period, with access to lethal means.
1	Poisoning	0	0	0	0	1	Overdose of cold medicine by multiple persons in household.
4	Firearm	1	0	3	0	1	Two suicides involved alcohol and/or drugs, access to lethal means and lack of response to known risks on the part of parents. Two homicides by non-caretakers. In both cases, perpetrators were in the household and known to be dangerous.
4	Fire/ Burn	2	0	0	0	2	In two cases, poor and dangerous living conditions contributed to the risk of fire and the inability to escape. One case involved lack of adult supervision.
7	Drowning	4	0	0	0	4	All involved lack of supervision of young children (ages 5 and under); infants left in the bathtub; toddlers entering swimming pools or ponds and lakes; and a 4-year-old who drowned in a lake, slipping from an inflatable toy and his mother couldn't swim.
3	Other	1	1	0	0	1	A teen in residential care died from an untreated spider bite. An 8-year-old had been exercising and going to a sauna with his father before football weigh-ins. Food and fluids had been withheld. A three-year-old was kicked by a horse.
TOTAL:		17	5	9	3	15	

*It should be noted that, in some cases, more than one neglect category was applied to a single child death.

Something We Can Do: Preventing Shaken Baby Syndrome

The majority of fatal inflicted injury deaths among children involve abusive head trauma, commonly known as Shaken Baby Syndrome (SBS). Research has demonstrated that prevention programs targeting all new parents and caregivers with education about the dangers of shaking and ways to cope with crying infants, results in a measurable reduction in the number of serious and fatal injuries.

Children's Trust Fund, Missouri's Foundation for Child Abuse Prevention, provides SBS Prevention materials, including brochures and "Preventing Shaken Baby Syndrome" videotapes for parent and for child care providers.

For additional information, or to order education materials, contact CTF at 573-751-5147 or visit the website at www.ctfkids.org.

Prevention Recommendations:

For parents:

- Report child abuse and neglect.
- Seek crisis help through the Parent Helpline (800-367-2543) or ParentLink (800-552-8522).

For community leaders and policy makers:

- *Support and fund home-visitation child abuse prevention programs that assist parents.*
- *Enact and enforce laws that punish those who harm children.*

For professionals:

- Support and facilitate public education programs that target male caretakers and child care provider.
- Expand training on recognition and reporting of child abuse and neglect.
- Support development and training for multidisciplinary teams to investigate child abuse.

For Child Fatality Review Panels:

- The role of CFRP panel is critical in identifying fatal child abuse, protecting surviving children, and ensuring that the family receives appropriate services. CFRP panels provide important data that enhances our ability to identify those children who are most likely to be abused and intervene before they are harmed.

Resources and Links:

National Committee to Prevent Child Abuse . . . . . www.childabuse.org
American Academy of Pediatrics . . . . . www.aap.org
Harborview Injury Prevention and Research Center . . . . . http://depts.washington.edu/hiprc
Missouri Children's Trust Fund
(Missouri's Foundation for Child Abuse Prevention) www.ctf4kids.com
The National Center on Shaken Baby Syndrome . . . . . www.dontshake.com
U.S. Department of Justice
Office of Juvenile Justice and Delinquency Prevention. . . . . www.ojjdp.ncjrs.org
ChildAbuse.com . . . . . .www.childabuse.com

"In the little world in which children have their existence, whosoever brings them up, there is nothing so finely preserved and so finely felt as injustice."
-Charles Dickens, from Great Expectations

Other Homicides

Of the 49 child homicides in Missouri in 2004, 23 involved perpetrators who were not in charge of the child; of those, 20 (89%) involved firearms.

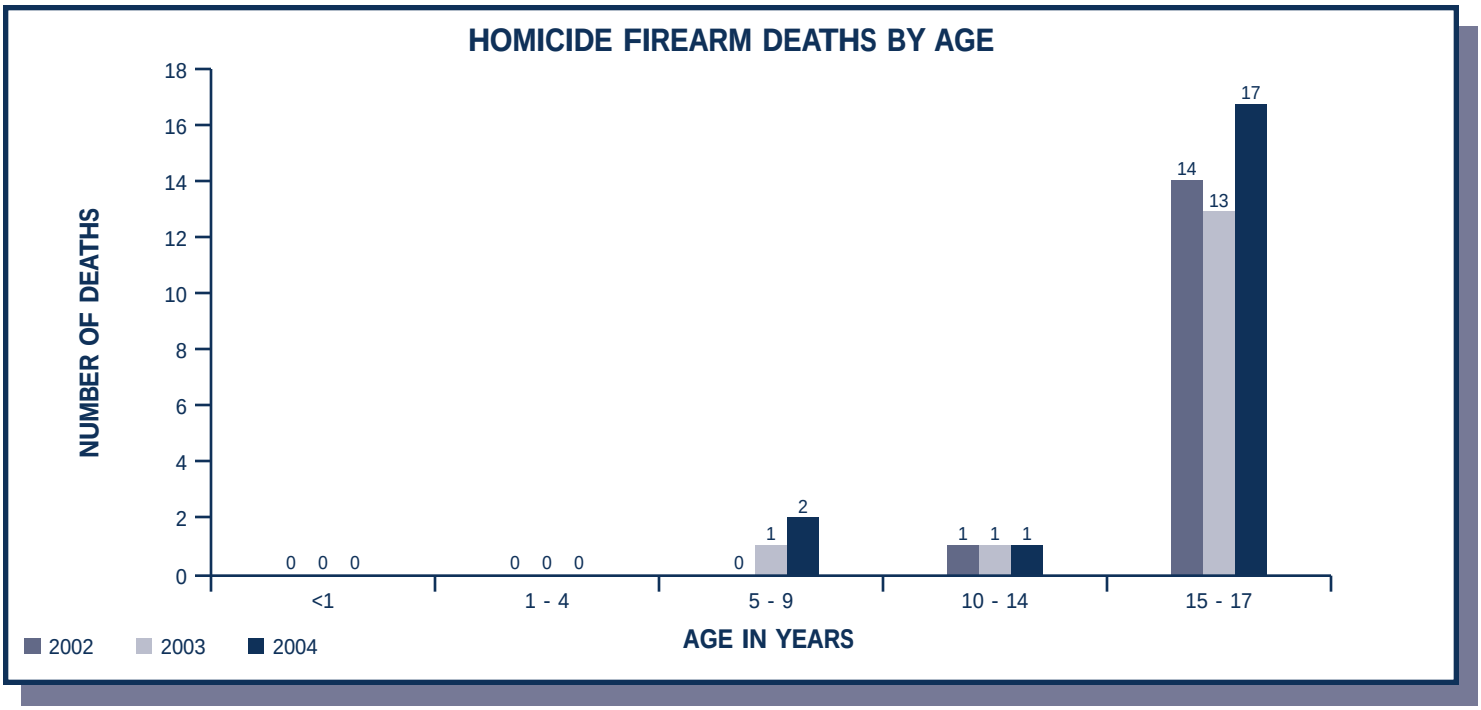
Representative Cases:

- **The increased availability of guns and drugs contributes to violence.**

  A 16-year-old male and several other household members were sitting on their front porch and argued with someone walking by. Later, someone shot several bullets into the group on the porch.

  A 17-year-old male had a long history of drug dealing. He was involved in gang activity and associated with chronic drug users. He was shot by a member of the gang because he was suspected of being a police informant.

  A 16-year-old female was standing in front of the home of a friend who has having a party. Another party goer, who had earlier been evicted for causing trouble, returned with an assault rifle and fired into the crowd. The teen victim was struck in the head and died at the scene.



HOMICIDE FIREARM FATALITIES BY SEX AND RACE

SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	2	3	5	WHITE	3	2	7
MALE	13	12	15	BLACK	12	13	13
	15	15	20		15	15	20

In 2004, **23** Missouri children were murdered by non-caretakers. The vast majority of victims were adolescents. Most youth homicides involve juvenile crime and violence, or abductions by adults or other adolescents that culminated in murder.

Youth Violence		Homicides, Other	
Firearm	14	Firearm	6
		Suffocation	1
		Vehicular	2

YOUTH HOMICIDE:

The most common mechanism of juvenile homicide is firearms, particularly inexpensive, readily available handguns. **Twenty** Missouri youths died of intentional firearm injuries in 2004. Youth homicides are a serious problem in large urban areas, especially among black males. The majority of gun homicides occur in the metropolitan areas of St. Louis and Kansas City. The number of firearm homicides among Missouri adolescents has risen sharply in the last three years, particularly when drug and gang activity is a factor. Other factors known to contribute to youth homicide include poverty, easy access to firearms, family disruption and school failure.

Nationally, the rate of juvenile arrest for violent crime has risen sharply since the mid-1980's. Over the next 10 years (1985-1994), juvenile arrests for murder, robbery, motor vehicle theft and weapons violations far surpassed the growth in adult arrests for these crimes. The growth in juvenile

homicides has been particularly disturbing. The rapid rise of gun homicides of youth coincided with the growth of crack cocaine markets in the inner city. The increased availability of guns to youth has been matched by an increased willingness to use violence to achieve one's goals. Violent confrontations are common in adolescence. If both parties are armed, the one who acts first usually gains a decided advantage. The realization that many youth on the street are carrying a weapon, increases the potential for an immediate and exaggerated response to real or perceived threats. Young males commit the majority of juvenile crime and violence. With the exception of rape and domestic violence, males are also more likely to be victims of violence than females. By age 17, the risk of homicide among males is five times that of females.

"It is important to keep the problem of youth violence in perspective...The current portrait of youth presented by the media is not grounded in statistical reality. The vast majority of young people do not carry weapons, do not deal drugs, do not join gangs and do not victimize their friends or neighborhoods...Most young people, like most adults, want nothing more than to lead their lives in peace."

"The causes of violence are many. The multi-faceted nature of violence almost invariably frustrates simplistic approaches to the problem. Youth violence can be prevented, but efforts must start at an early age and be sustained over time. Early childhood experiences, the nature of a child's family, the influence of peers, the neighborhood and society are keys to solving the puzzle."
-Harborview Injury Prevention and Research Center

PROMISING APPROACHES:

Individuals and organization working to prevent firearm violence, choose and develop strategies that are specifically appropriate for them to use, depending on what aspect of the problem they would like to address. Interventions can be categorized into three basic types: educational, legal and technological/environmental.

- *Educational programs* are often carried out in the schools, and community-based organizations. They emphasize prevention of weapon misuse, the risks involved with possession of a firearm, and the need for conflict resolution and anger management skills.

- *Legal measures* strive to limit access to firearms-the number and type of people eligible to own or possess firearms, as well as the types of firearms that can be manufactured, owned and carried.

- *Technological/environmental interventions:* Firearm design requirements are both a technological and a legal intervention. Environmental and technological measures are based on the premise that automatic protections are more effective than those requiring specific action by individuals.

Violence Prevention Recommendations:

For parents:

- Provide supervision, support and constructive activity for children and adolescents in your household.
- Access family therapy and parenting assistance, as necessary, for help with anger management skills, self-esteem and school problems.

For community leaders and policy makers:

- Support the implementation of violence prevention initiatives.
- Encourage programs that provide support, education and activities for youth.
- Support legislation that restricts access to guns by children and adolescents.

For professionals:

- Support and implement crisis interventions and conflict resolution programs within the schools.

For Child Fatality Review Panels:

- Ensure that support for victims and survivors of youth violence is available.
- Support proactive approaches to crime control, especially those programs that include efforts to confiscate illegally carried firearms.

Resources and Links:

National Center for Injury Prevention and Control . . . . . .www.cdc.gov/ncipc

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

US Department of Justice

Office of Juvenile Justice and Delinquency Prevention. . . . . www.ojjdp.ncjrs.org

The National Youth Violence Prevention Resource Center . . . . . www.safeyouth.org

Missouri Juvenile Justice Association . . . . . www.mjja.org

SUICIDES

"Suicide is not chosen; it happens when pain exceeds resources for coping with pain."

Suicide was the manner of death of 31 Missouri children in 2004.

Representative Cases:

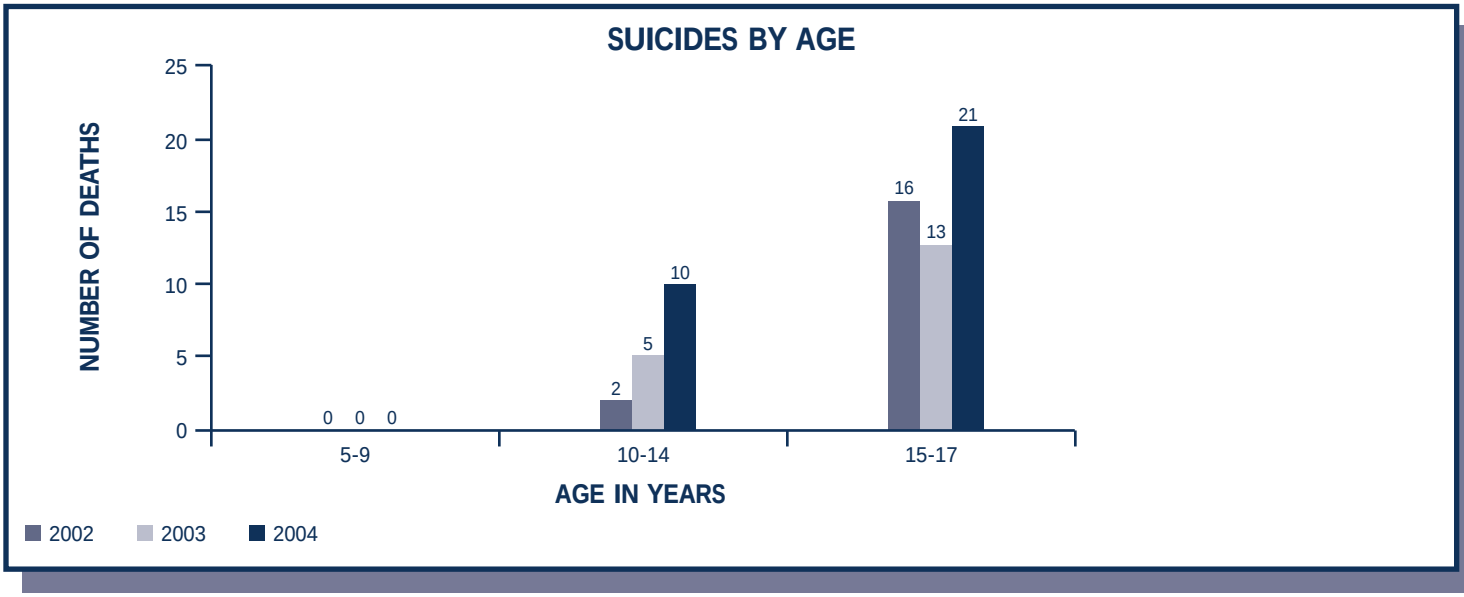
- **Parents and professionals are responsible for children must be educated to recognize and respond to risk factors for suicide.**

  A 13-year-old male with a history of mental health problems, got into trouble at school, on the bus and, later, at home. After arguing with his parents, he went upstairs and shot himself.

  A 17-year-old shot himself after a night of drinking; his blood alcohol was .14%. Law enforcement later learned that the mother had allowed her son and a group of teens to drink in her home. The victim had an extensive juvenile history and the mother had appeared in the Juvenile Office intoxicated.

  A 15-year-old had a history of depression and was being treated with an anti-depressant. He committed suicide by carbon monoxide vehicle exhaust. There were no medications found in his system.

In Missouri and the United States, suicide is the third leading cause of injury-related deaths for young people following unintentional injuries and homicides. The suicide rate among young teens and young adults increased by more than 300% in the last three decades and rates continue to remain high. In Missouri in 2004, **31** children died of self-inflicted injury; **21** were age 15-17; the remaining **10** were children age 10-14.

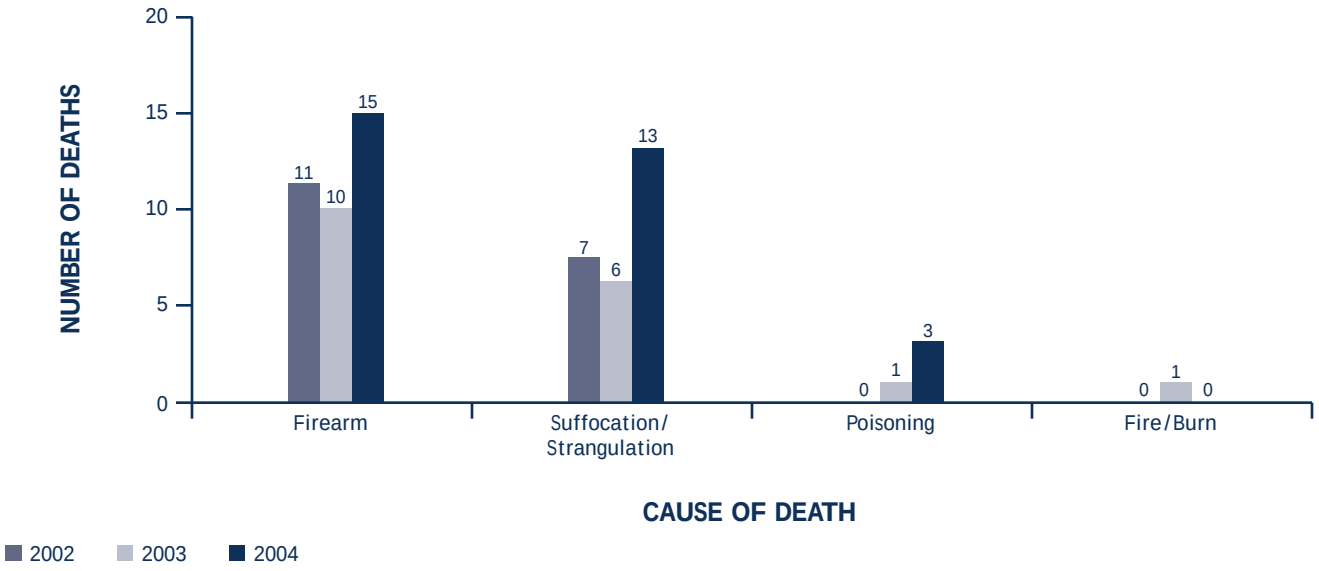


White males comprise the majority of adolescent suicide victims in Missouri. Although more females attempt suicide than males, males are approximately three times more likely to die from suicide.

SUICIDES BY SEX AND RACE

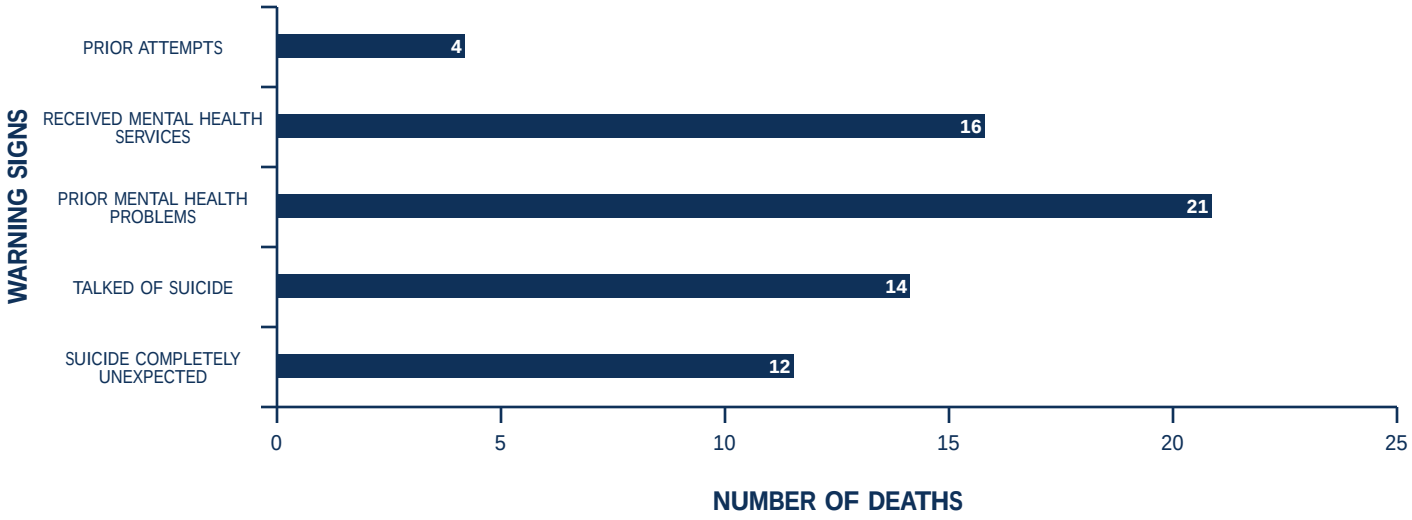
SEX	2002	2003	2004	RACE	2002	2003	2004
FEMALE	1	4	9	WHITE	17	15	28
MALE	17	14	22	BLACK	1	3	1
				OTHER			2
	18	18	31		18	18	31

SUICIDES BY MECHANISM



Firearms and suffocation/strangulation are the most common mechanisms of suicide among Missouri children.

WARNING SIGNS OF SUICIDE



Of the **31** suicide victims age 17 and under in 2004, **22** (71%) had displayed one or more warning signs.

"The suffering of the suicidal is private and inexpressible, leaving family members, friends, and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its aftermath a level of confusion of devastation that is, for the most part, beyond description."
-Kay Redfield Jamison

Preventing Youth Suicide:

Suicidal behaviors in young people are usually the result of a process that involves multiple social, economic, familial and individual risk factors, with mental health problems playing an important part in its development. Identified risk factors for suicide and attempted suicide for young people include: mood disorders, substance abuse, certain personality disorders, low socioeconomic status, childhood maltreatment, parental separation or divorce, inappropriate access to firearms and interpersonal conflicts or losses. Only a few studies have examined protective factors among youth for suicidal behavior. Both parent-family connectedness and perceived school connectedness have been shown to be protective against suicidal behavior.

Missouri's Response:

In 1999, the U.S. Surgeon General, Dr. David Satcher, issued a "Call to Action to Prevent Suicide," introducing an initial blueprint for reducing suicide in the United States, summarized as "AIM" (awareness, intervention and methodology.) In response, a conference was convened that same year in Kansas City titled: "Creating Community Action for Suicide Prevention: Bringing a National Dialogue to the Community." Missouri delegates met and began to outline strategies to address suicide prevention in our state. Subsequently a small writing group convened to develop a draft of Missouri's State Plan for Suicide Prevention, which includes specific Missouri statistics, prevention resources within state government, risk/protective factors applicable to Missouri, and specific strategies based on the AIM blueprint.

Prevention resources in Missouri government include the Department of Health and Senior Services, the Department of Mental Health, Department of Elementary and Secondary Education, Department of Social Services, Department of Corrections and Caring Communities. The Department of Elementary and Secondary Education was mandated to develop a suicide prevention plan for schools by SB 994, which was passed in 2000.

Within the Department of Social Services, the child abuse and neglect hotline is a source available to address suicide prevention intervention for the Children's Division. Foster parents are trained to identify and respond to suicidal behaviors. Each time a child is placed in a new foster home, the suicide risk is addressed. In-home Intervention Service workers attend annual training on suicide prevention and intervention.

The final version of the Missouri Suicide Prevention Plan and links to suicide prevention resources are available online at the Missouri Department of Mental Health website, www.dmh.mo.gov/cps/issues/suicide.htm.

Prevention Recommendations:

For parents:

- Seek early treatment for children with behavioral problems, possible mental disorders (particularly depression and impulse-control disorders) and substance abuse problems.
- Limit young people's access to lethal means of suicide, particularly firearms.

For community leaders and policy makers:

- Encourage health insurance plans to cover mental health and substance abuse on the level physical illnesses are covered.
- Support and implement school and community prevention programs designed to address suicide and suicidal behavior as part of a broader focus on mental health, coping skills in response to stress, substance abuse and aggressive behaviors.
- Enact and enforce laws and policies that limit young people's access to firearms and encourages responsible firearm ownership.

For professionals:

- Children who have attempted suicide or displayed other warning signs should receive aggressive treatment attention.

For Child Fatality Review Panels:

- Support or facilitate evidence-based suicide prevention programs in your community.
- In reviewing a possible suicide, consider carefully the warning signs and history of the victim. Consider, also, points of early intervention that can be enhanced in your community to prevent other suicides and suicidal behaviors.

Resources and Links:

Missouri Department of Mental Health . . . . . www.dmh.mo.gov/cps/issues/suicide.htm

National Strategy for Suicide Prevention . . . . . www.mentalhealth.org/suicideprevention

American Association of Suicidology . . . . . www.suicidology.org

Kids Under Twenty-One (KUTO) . . . . . www.kuto.org

National Hopeline Network 1-800-SUICIDE (1-800-784-2433)

The Practical Application of Child Death Review: Prevention of Child Fatalities

Overview

Injuries continue to be the leading cause of death among children in the United States and the majority of fatal and near-fatal injuries are unintentional or "accident." In the past, most people believed that serious and fatal injuries were random or unavoidable events, or simply the result of individual carelessness. Fortunately, the science of injury prevention has moved away from this fatalistic approach to one that focuses on the environment and products used by the public, as well as individual behavior. Unintentional injuries are now widely recognized as understandable, predictable and preventable. It is also generally agreed that intentional injuries, including youth violence, suicide and child abuse and neglect, are also becoming more understandable and preventable, because of an increased understanding of risk and protective factors. While these deaths are fewer than other causes, they have life-altering consequences for surviving children and families.

Despite an increasing awareness of severe violence against children, very little was known in the past about fatal child abuse and neglect. In the mid-1980's, Missouri researches discovered that many fatal child injury cases were inadequately investigated and that many children were dying from common household hazards, as a result of inadequate supervision. Many cases of fatal abuse and neglect went undetected, misclassified as natural deaths, accidents or suicides. A number of states responded by implementing child death review programs, but not all proved to be effective or sustainable.

By the mid-1990's, the U.S. Advisory Board on Child Abuse and Neglect recommended the creation of multi-agency state and local child death review teams as a critically important component in an effective strategy for responding to our "nation's shame." In the decade that followed, every state and a number of foreign countries implemented child death review systems. Design and implementation of CDR programs vary because of the wide range of options from which to choose in terms of structure, process, membership, review criteria and the collection and use of data. Nevertheless, the vision that drives all child death review systems is to understand and prevent child deaths and serious injuries.

Applying the data

Child fatalities represent the extreme of all issues that have a negative impact on children. Most of what we learn from reviews of deaths can also be applied to the millions of abused and neglected children who survive. The death of a child is a sentinel event that captures the attention of the public and creates a sense of urgency that deserves a well-planned and coordinated prevention response. Generally, successful prevention initiatives are realistic in scope and approach, clear and simple in their message, and based on evidence that they work!

Local and regional teams are remarkably dedicated and enthusiastic in initiating timely prevention activities that serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives. In Missouri, local CDR team members organized a coalition focused on child fatality prevention after two residential fires killed three children in less than a month. The coalition collaborated with two area fire departments to canvass the neighborhoods where the deaths occurred, installed smoke detectors and batteries where they were needed and raised public awareness through the media. A decade later, the Annual Neighborhood Fire Prevention Awareness Day continues in multiple locations throughout the region.

At the state and national level, the sum of collected data is used to identify trends and patterns that require systemic solutions. Researchers in St. Louis utilized Missouri CDR data to gain new insights into sudden, unexpected infant deaths and concluded that certain unsafe sleep arrangements occurred in the large majority of cases of sudden infant deaths diagnosed as SIDS, unintentional suffocation and cause undetermined. Research had demonstrated what CDR team members had suspected: Infant deaths caused by unsafe sleep conditions were preventable. In Missouri, Iowa, Wisconsin, Minnesota and other states, safe sleep campaigns, developed and implemented by a variety of public and private entities, include parent education and provide a safe crib to families in need. The Consumer Product Safety Commission and the American Academy of Pediatrics revised their safe sleep recommendations to reflect this new information.

Basic principles

It is widely accepted among professionals in the field of injury prevention that the public health tools and methods used effectively against infectious and other diseases and occupational hazards, can also be applied to injury prevention. As a result, attention is given to the environment and to products used by the public, as well as individual behavior. An epidemiologic approach to child fatalities and near-fatalities offers tools that can effectively organize prevention interventions and draws on expertise in surveillance, data analysis, research, public education and intervention. There are four steps that are interrelated:

- ***An ongoing surveillance of child fatalities provides comparable data, documentation and monitoring over time. (What's the problem?)*** Current efforts to create a standardized case report tool and data system on the national level are keys to improving and protecting the lives of all children and adolescents. Even a small subset of uniform data would give us the opportunity to identify valuable national trends and patterns. The National Maternal Child Health Center for Child Death Review provides technical assistance and training, support resources and tools to states with the goal of expanding reviews to all preventable deaths, and using the information from CDR to improve and protect the lives of children.

- ***Risk factor research identifies or confirm what is known about risk and protective factors that may have relevance for public policies and prevention programs. (What's the cause?)*** In Western New York, a hospital-based program was developed to educate all new parents about the dangers of shaking an infant. This initiative has effectively reduced the incidence of Shaken Baby Syndrome in that region every year since it was implemented. This program has been replicated throughout the country and proven equally successful. Several states have passed legislation requiring this program in all hospitals. Other states have included SBS education as part of the licensing process for child care providers. In this way, prevention of Shaken Baby Syndrome is being integrated in state and community systems that provide services and support to children and families.

- ***Identification of evidence-based strategies that have proven effective or have high potential to be effective. (What works?)*** Assessing effectiveness of a prevention strategy as it is implemented is difficult, because of limited resources and limited reliability of existing assessment tools. However, resources are available to assist in evaluating various strategies during the early stages of planning. The benefits in terms of funding and long-term cost are obvious. The safe sleep and SBS initiative described above were based on research. University-based research groups, such as Harborview Injury Prevention and Research Center and the Childhood Injury Research Group at the University of Missouri provide evaluations of various injury prevention strategies. National

organizations and governmental agencies, such as the National Safe Kids campaign and the National Center for Injury Prevention at CDC and the American Academy of Pediatrics provide research and prevention information.

- ***Implementation of strategies where they currently do not exist. (How do you do it?)*** Outcomes for prevention initiatives are generally functions of structure and duration. Short-term, emergency and educational programs are effective in the short-term; unfortunately, such programs are usually based on the effort and enthusiasm of a few individuals and a limited funding source. Prevention initiatives that are integrated into community and state systems are sustainable and effective in the long term. Examples include state laws that require proper restraint for child passengers in motor vehicles and helmets for children riding bicycles. In many areas, schools include safety education for children and health care providers, who are in a unique position to assist in the prevention of child maltreatment, actively promote health and safety for children. Many state and local entities responsible for licensing child care providers are mandating education on safe sleep for infants and toddlers and prevention of child abuse, including Shaken Baby Syndrome, as part of their curricula.

RESOURCES:

American Academy of Pediatrics . . . . . www.aap.org

Children's Safety Network . . . . . http://research.marshfieldclinic.org

Consumer Product Safety Commission . . . . . www.cpsc.gov

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

Missouri Child Fatality Review Program . . . . . .http://dss.missouri.gov/stat/mcfrp.htm

Missouri Child Death Pathologists' Network . . . . . http://dss.missouri.gov/stat/cpn/htm

Missouri Children's Trust Fund www.ctf4kids.org

Missouri Prevention. . . . . .www.missouriprevention.org

National Center for Injury Prevention and Control . . . . . .www.cdc.gov/ncipc

National Center on Shaken Baby Syndrome . . . . . www.dontshake.com

National MCH Center for Child Death Review . . . . . www.childdeathreview.org

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

Prevention Findings: The Final Report

"Injury is a problem that can be diminished considerably if adequate attention and support are directed to it. Exciting opportunities to understand and prevent injuries and to reduce their effects are at hand. The alternative is the continued loss of health and life to predictable, preventable and modifiable injuries."

-Dr. William Foege, Former Director of the Centers for Disease Control and Prevention

The difference between a fatal and nonfatal event is often only a few feet, a few inches, or a few seconds. In the past, most people believed that serious and fatal injuries were random or unavoidable events, or simply the result of individual carelessness. Fortunately, the science of injury prevention has moved away for this fatalistic approach to one that focuses on the environment and products used by the public, as well as individual behavior. Injuries are now widely recognized as understandable, predictable and preventable.

A *preventable child death* is defined as one in which awareness or education by an individual or the community may have changed the circumstances that lead to the death. Prior to August 2000, CFRP panels were asked to report their conclusions and prevention responses for each death reviewed on the Data Form 2. Legislation passed in 2000, now requires that the panel complete a Final Report, summarizing their findings in terms of circumstances, prevention messages, and community-based prevention initiatives.

The death of a child is a sentinel event that captures the attention of the community, creates a sense of urgency and a window of opportunity to respond to the questions, "What can we do?" County-based prevention activities serve to raise awareness, educate parents and caretakers, influence public policy and involve the community in prevention initiatives that protect and improve the lives of children. In 2004, CFRP panels throughout our state reported their findings and prevention responses utilizing the Final Report. The initiatives highlighted below demonstrate how a few volunteer professionals have been able to measurably reduce or eliminate threats to the lives and well being of countless Missouri children.

Legislation, Law or Ordinance:

A fourteen-year-old boy was found dead at a residential treatment facility. The boy died as a result of an unrecognized medical emergency. The panel recommended that unlicensed treatment facilities be made subject to some degree of regulation by an appropriate authority.

A thirteen-year-old male was killed after his ATV rolled over on him. The panel met and recommended that legislators introduce laws regarding non-licensed drivers operating ATV's, helmet laws for ATV drivers and apply age restrictions to ATV drivers. They also recommended a required safety class for ATV operators, similar to the hunter safety classes.

Community Safe Project:

A nine-year-old girl and her family were found dead in their home. A car had been left running in the garage, all died of carbon monoxide poisoning. The county panel recommended a promotional effort in the community for carbon monoxide detectors, as well as smoke detectors.

A five-year-old boy was killed when he was struck and run over by a school bus. The local panel met with school personnel, transportation personnel and community neighborhood watch members to discuss safety and educational issues regarding school buses and bus stops. The panel also formed a committee of community and school personnel to meet and share safety and educational ideas concerning children and school buses. This committee plans develop a "pilot" project to ensure the safety of children on and off the bus.

Public Forums:

A fifteen-year-old boy committed suicide. The local panel contacted the school and held a town hall meeting regarding suicide prevention and requested the community implement programs addressing youth with at risk behaviors. They also asked a licensed counselor to the meeting to talk with parents and students about coping with a suicide related death.

An eleven-year-old girl was accidentally shot and killed while she and her friend were playing with a gun found in the home. The panel held a public meeting regarding firearm safety and the importance of keeping guns locked in the home. As a result of the meeting, the local Sheriff's Department has placed firearm locks at their office, free to the public.

Educational Activities in Schools:

A fifteen-year-old boy was found unresponsive in his home and died a day later in the hospital. He had taken five morphine tablets and was known to be huffing inhalants. The boy's parents presented a program to the Middle School and High School regarding inhalant abuse. Pamphlets regarding inhalant abuse were also passed out to the students and parents.

A seventeen-year-old boy was killed in a motor vehicle accident. The local panel staged a mock drill before the high school students, simulating a vehicle accident involving occupants that have been drinking. They also had EMS come to simulate what they do at the scene.

Educational Activities in the Media:

A fourteen-year-old boy was found at the bottom of a pond, he had drowned. The panel released several news articles regarding water safety and the need for adult supervision around bodies of water in the local newspaper. They also placed water safety instructions in local businesses throughout town.

A newborn infant died at the hospital shortly after birth. The teenage mother was unaware she was pregnant. The panel met with the local Health Department to discuss teen pregnancy and birth control strategies. The local Health Department agreed to place an article in the newspaper encouraging sexually active teens to use some form of birth control and to see a doctor or come to the Health Department, if they think they may be pregnant.

Consumer Product Safety:

A 7-month-old infant was placed in a baby swing for nap. While unattended, the child slid down in the swing and suffocated, when the chest strap became wrapped around their neck. The panel saw this as an opportunity to remind parents never to leave infants unattended and to always make sure that the child is properly placed in a swing.

News Services:

A three-year-old child died in a house fire. She was found in the corner of her room. The fire had started after other children had been playing with a cigarette lighter. The house had no working smoke detectors. The county panel contacted local newspapers and ran stories promoting fire safety. In the article, it stressed the importance of escape plans and teaching children not to play with fire (lighters or matches). They also focused on the importance of working smoke detectors.

A three-month-old boy was put to sleep in his parents bed, he was found unresponsive the next morning. The panel released several public service announcements and ran articles in the local newspaper regarding the hazards of co-sleeping. They also began researching how to start a safe crib project in their community.

Changes in Agency Practice:

A thirteen-month-old child died due to an asthma attack. Mom had not refilled medication or returned for further doctor's appointments. The panel approached the hospital regarding follow-up measures on at-risk patients. The hospital agreed to put in a flagging system for fatality prone asthma patients, if they do not show up for their appointments.

A nine-month-old girl was found lifeless in her crib. Her parents were intellectually limited and were receiving services from the Department of Social Services. The panel recommended that the Department of Social Services review policy and procedures for services to mentally limited parents.

Other Programs/Activities:

A two-month-old infant was put down early in the morning for a nap on an air mattress. The child was found later that afternoon, unresponsive. The panel suggested that hospital staff talk with parents about safe sleep practices and appropriate supervision guidelines for infants, before sending the infant home.

A nine-year-old boy was electrocuted while climbing a tree at a friend's house. The Child Fatality Review Program panel contacted the local electric cooperative about providing educational programs in elementary schools regarding safety.

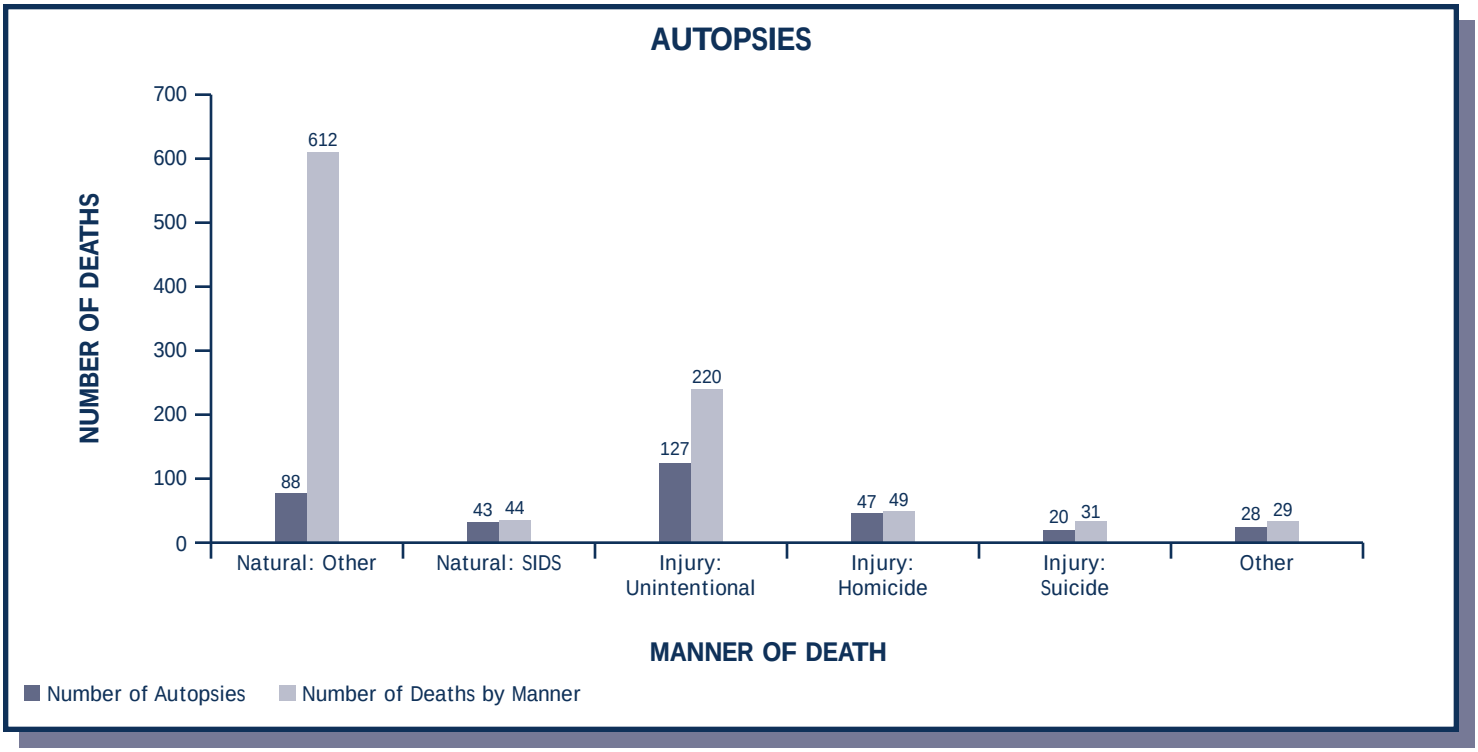
"Alone we can do so little, together we can do so much." -Helen Keller

APPENDICES

APPENDIX 1. AUTOPSIES

The autopsy is a critical component in accurately determining the cause of death, especially in the case of sudden infant deaths. RSMo 194.117 requires that an autopsy be performed for all children from 1 week to 1 year of age, who die in a sudden, unexplained manner.

Missouri's Certified Child-Death Pathologist Network ensures autopsies performed on children, birth through age 17, are performed by professionals with expertise in forensic pediatrics. Additionally, network members are available to consult with coroners and other investigating child deaths. A listing of network members can be obtained through STAT or on the internet at www.dss.mo.gov/stat/cpn.htm.



Appendix 2. Mandated Activities for Child Fatalities

Every county must have a multidisciplinary child fatality review panel (114 counties and City of St. Louis).

The county panel must consist of at least the following seven core members: prosecuting attorney, coroner/medical examiner, law enforcement representative, Children's Division representative, public health representative, juvenile officer and emergency services representative. Panels may elect to have additional members.

All deaths, ages birth to 17, must be reported to the coroner/medical examiner.

Children, age 1 week to 1 year, who die in a *sudden, unexplained* manner must have an autopsy.

The State CFRP panel must meet at least twice per year to review the program's progress and identify systemic needs and problems.

Panels must use uniform protocols and data collection forms.

Certified child-death pathologists must perform the autopsies.

Knowingly violating reporting requirements is a Class A misdemeanor.

When a child's death meets the criteria for review, activation of the panel must occur within 24 hours of the child's death, with a meeting scheduled as soon as practical.

Appendix 3. Process for Child Fatality Reviews

Any child, birth through age 17, who dies will be reported to the coroner/medical examiner.

The coroner/medical examiner conducts a death-scene investigation, notifies the Child Abuse and Neglect Hotline and completes Data Form 1. The coroner/medical examiner, along with a certified child-death pathologist will determine the need for autopsy.

If an autopsy is needed, it is performed by a certified child-death pathologist. Results are brought to the child fatality review panel by the coroner/medical examiner, if reviewable criteria

If the death is <u>not reviewable</u>, the Data Form 1 is completed by the coroner/medical examiner. The coroner/medical examiner sends the Data Form 1 to the chairperson of the child fatality review panel for co-signature. The chairperson sends the Data Form 1 to STAT within 48 hours.

STAT reviews for accuracy and completeness, signs and sends Data Form 1 to STAT; STAT links Data Form 1 to the Department of Health and Senior Services birth and death data.

If the death is <u>reviewable</u>, the coroner/medical examiner sends the Data Form 1 to the chairperson of child fatality review panel for co-signature. The chairperson sends the Data Form 1 to STAT within 48 hours. The chairperson refers the death to the child fatality review panel. (The panel is notified within 24 hours.)

The panel meeting is scheduled by the chairperson as soon as possible. The panel reviews circumstances surrounding the death and takes appropriate actions. The Data Form 2 is completed, co-signed by the chairperson and sent to STAT within 60 days. Within 10 days of completion of the review, filing of criminal charges or the determination of charges not being filed, the Final Report should be prepared and forwarded to STAT.

STAT links Data Form 1 and 2 to Department of Health and Senior Services birth and death data. Panel members pursue the mandates of their respective goals.

Appendix 4. Missouri Incident Child Fatalities (Age less than 18) by County 2002-2004

County of Event	All Deaths			Reviewed Deaths			Injury Deaths			Census Population
	2002	2003	2004	2002	2003	2004	2002	2003	2004	
Adair	0	1	2	0	0	0	0	0	0	4,796
Andrew	0	1	2	0	0	2	0	0	1	4,348
Atchison	0	0	0	0	0	0	0	0	0	1,547
Audrain	3	4	2	2	2	1	2	2	1	6,360
Barry	3	9	5	2	7	2	2	5	2	8,875
Barton	0	3	0	0	2	0	0	3	0	3,445
Bates	4	1	3	2	1	0	2	1	2	4,419
Benton	4	4	2	3	4	0	2	3	1	3,516
Bollinger	1	1	4	0	0	4	1	0	3	3,151
Boone	50	49	36	9	10	3	6	9	2	30,902
Buchanan	12	12	19	6	3	9	4	2	4	20,937
Butler	19	12	1	5	6	1	2	3	0	9,886
Caldwell	2	2	4	0	1	2	1	1	1	2,428
Callaway	7	10	4	6	9	1	4	7	1	10,371
Camden	6	9	6	0	8	4	4	8	4	7,508
Cape Girardeau	12	9	1	7	0	0	3	2	0	16,097
Carroll	1	0	2	0	0	0	1	0	1	2,589
Carter	0	2	3	0	2	2	0	1	2	1,493
Cass	11	6	10	8	2	5	5	1	2	23,307
Cedar	2	4	3	1	2	1	1	2	1	3,382
Chariton	1	1	1	0	1	1	0	1	1	1,997
Christian	5	9	8	2	8	4	1	5	2	15,114
Clark	1	0	2	0	0	2	0	0	2	1,852
Clay	20	10	30	12	6	14	9	4	10	47,530
Clinton	4	3	2	3	1	2	2	1	1	5,079
Cole	11	3	4	4	1	1	3	2	2	17,294
Cooper	4	2	4	3	1	3	4	1	2	3,801
Crawford	2	2	3	2	2	3	1	1	3	5,990
Dade	1	3	0	1	1	0	1	3	0	1,928
Dallas	1	6	5	1	3	3	1	2	1	4,302
Daviess	1	1	2	1	0	1	1	1	0	2,162
DeKalb	0	0	1	0	0	0	0	0	0	2,403
Dent	1	1	3	0	1	2	0	0	2	3,716
Douglas	0	1	1	0	1	0	0	1	1	3,382
Dunklin	6	3	5	3	0	2	2	2	2	8,613
Franklin	14	10	7	11	7	3	7	7	2	25,661
Gasconade	2	6	0	2	5	0	2	6	0	3,800
Gentry	0	1	2	0	0	0	0	0	0	1,782
Greene	53	58	56	16	21	20	11	11	16	53,501
Grundy	0	2	0	0	0	0	0	1	0	2,424
Harrison	0	1	0	0	1	0	0	1	0	2,103
Henry	1	6	0	1	6	0	0	3	0	5,220

Appendix 4. Missouri Incident Child Fatalities (Age less than 18) by County 2002-2004

County of Event	All Deaths 2002	All Deaths 2003	All Deaths 2004	Reviewed Deaths 2002	Reviewed Deaths 2003	Reviewed Deaths 2004	Injury Deaths 2002	Injury Deaths 2003	Injury Deaths 2004	Census Population
Hickory	4	4	2	2	2	1	4	2	1	1,782
Holt	1	0	0	0	0	0	0	0	0	1,272
Howard	1	1	0	0	1	0	0	0	0	2,451
Howell	9	5	5	6	5	3	3	2	2	9,676
Iron	2	2	1	1	1	1	0	1	0	2,673
Jackson	169	157	144	73	64	61	39	36	28	168,766
Jasper	12	11	16	6	2	10	4	5	9	26,952
Jefferson	23	27	34	12	15	14	9	8	15	55,270
Johnson	7	7	8	5	3	2	4	1	3	12,124
Knox	0	0	0	0	0	0	0	0	0	1,087
Laclede	10	5	7	6	3	6	3	3	2	8,675
Lafayette	2	6	4	0	5	4	0	4	2	8,636
Lawrence	6	7	7	6	3	2	1	2	4	9,578
Lewis	0	0	1	0	0	1	0	0	1	2,627
Lincoln	4	4	4	3	0	3	3	0	2	11,691
Linn	3	0	2	3	0	1	3	0	0	3,489
Livingston	4	2	4	2	1	3	3	1	2	3,553
McDonald	8	5	6	7	1	4	7	4	1	6,259
Macon	1	4	3	0	3	3	0	2	3	3,820
Madison	2	2	2	1	1	2	1	1	1	2,904
Maries	1	0	1	1	0	0	0	0	1	2,318
Marion	5	4	2	2	1	0	2	1	0	7,269
Mercer	0	2	0	0	1	0	0	1	0	864
Miller	1	4	4	0	3	1	0	3	2	6,198
Mississippi	2	6	4	2	4	4	1	2	4	3,534
Moniteau	1	3	5	1	1	5	0	1	4	3,836
Monroe	1	2	0	1	0	0	0	2	0	2,410
Montgomery	1	0	0	1	0	0	1	0	0	3,085
Morgan	3	4	0	3	3	0	1	2	0	4,595
New Madrid	2	2	0	0	2	0	2	2	0	5,223
Newton	29	24	9	6	1	2	8	1	2	13,819
Nodaway	1	0	1	1	0	1	1	0	1	4,245
Oregon	0	0	0	0	0	0	0	0	0	2,515
Osage	2	2	0	2	1	0	0	2	0	3,437
Ozark	0	2	1	0	2	1	0	2	1	2,107
Pemiscot	3	7	5	1	4	3	0	3	2	6,015
Perry	2	1	4	0	1	2	0	1	1	4,715
Pettis	8	6	6	6	6	3	4	4	4	10,377
Phelps	9	7	6	1	4	4	1	3	3	9,442
Pike	2	2	9	1	1	4	1	1	6	4,293
Platte	7	3	6	5	2	3	2	1	3	19,026

Appendix 4. Missouri Incident Child Fatalities (Age less than 18) by County 2002-2004

County of Event	All Deaths 2002	All Deaths 2003	All Deaths 2004	Reviewed Deaths 2002	Reviewed Deaths 2003	Reviewed Deaths 2004	Injury Deaths 2002	Injury Deaths 2003	Injury Deaths 2004	Census Population
Polk	0	0	1	0	0	0	0	0	0	6,947
Pulaski	4	6	6	3	2	3	1	3	3	11,338
Putnam	0	0	0	0	0	0	0	0	0	1,254
Ralls	0	1	1	0	1	1	0	1	1	2,429
Randolph	5	5	3	0	1	0	3	4	2	5,874
Ray	6	0	3	4	0	2	2	0	1	6,433
Reynolds	2	3	1	1	3	0	1	1	0	1,608
Ripley	3	2	2	2	1	0	2	1	0	3,352
St. Charles	28	30	40	10	9	16	7	6	11	82,248
St. Clair	0	1	0	0	0	0	0	0	0	2,219
St. Francois	7	6	3	4	2	0	3	1	2	13,335
St. Louis County	190	192	167	54	52	54	29	28	29	255,991
Ste. Genevieve	2	2	0	0	1	0	1	1	0	4,749
Saline	5	4	9	2	0	6	1	0	5	5,773
Schuyler	1	0	0	1	0	0	1	0	0	1,027
Scotland	0	2	1	0	1	1	0	0	0	1,423
Scott	10	5	1	8	1	0	7	1	1	11,085
Shannon	0	1	1	0	1	0	0	1	0	2,199
Shelby	0	0	1	0	0	0	0	0	0	1,729
Stoddard	1	8	11	0	6	5	1	5	4	7,093
Stone	6	5	5	6	5	5	3	3	4	6,138
Sullivan	1	0	2	1	0	0	0	0	1	1,807
Taney	3	8	16	2	6	13	2	5	9	8,912
Texas	2	4	4	2	2	1	0	2	1	5,734
Vernon	9	4	5	5	1	4	4	1	3	5,436
Warren	8	2	2	8	2	2	6	2	2	6,586
Washington	3	4	3	1	2	2	1	1	0	6,205
Wayne	1	0	3	0	0	3	0	0	1	3,079
Webster	4	6	9	3	5	6	1	4	3	8,957
Worth	0	1	1	0	1	0	0	0	0	579
Wright	4	2	2	2	2	2	3	1	2	4,877
St. Louis City	162	163	123	72	56	54	31	25	35	89,657
STATE TOTAL	**1,080**	**1,065**	**984**	**471**	**435****	**432**	**303**	**304**	**305**	**1,427,692**

**Form 2 completed after report deadline.

Appendix 5. Missouri Incident Child Fatalities (Age less than 18) by Age, Sex and Race 2002-2004

Age	All Deaths 2002	All Deaths 2003	All Deaths 2004	Reviewed Deaths 2002	Reviewed Deaths 2003	Reviewed Deaths 2004	Injury Deaths 2002	Injury Deaths 2003	Injury Deaths 2004
0	673	671	574	186	168	155	47	53	53
1	45	29	43	30	18	32	14	10	16
2	31	28	30	21	20	18	13	16	16
3	17	19	14	13	10	10	11	10	8
4	15	23	21	7	17	14	5	11	11
5	15	12	17	8	7	10	10	4	9
6	13	4	10	9	4	4	10	3	5
7	14	14	13	10	9	8	7	7	5
8	9	9	12	5	6	5	4	5	3
9	10	12	10	7	6	5	6	6	5
10	19	14	14	11	7	11	11	6	9
11	14	16	15	11	6	10	8	5	7
12	14	15	16	7	10	6	7	9	7
13	23	23	24	16	12	15	13	12	10
14	22	28	19	14	20	16	14	23	16
15	27	26	40	23	17	31	22	18	28
16	55	59	48	44	47	34	46	49	44
17	63	63	64	48	51	48	54	57	53
20	1	0	0	1	0	0	1	0	0
TOTAL	**1,080**	**1,065**	**984**	**471**	**435**	**432**	**303**	**304**	**305**

Sex	All Deaths 2002	All Deaths 2003	All Deaths 2004	Reviewed Deaths 2002	Reviewed Deaths 2003	Reviewed Deaths 2004	Injury Deaths 2002	Injury Deaths 2003	Injury Deaths 2004
Unknown	2	1	0	0	0	0	0	0	0
Male	614	608	562	287	273	248	186	195	180
Female	464	456	422	184	162	184	117	109	125
TOTAL	**1,080**	**1,065**	**984**	**471**	**435**	**432**	**303**	**304**	**305**

Race	All Deaths 2002	All Deaths 2003	All Deaths 2004	Reviewed Deaths 2002	Reviewed Deaths 2003	Reviewed Deaths 2004	Injury Deaths 2002	Injury Deaths 2003	Injury Deaths 2004
White	758	779	705	311	39	306	224		232
Black	303	267	257	153	124	118	73	67	66
Other	11	10	8	3	1	4	2	1	4
Unknown	8	9	14	4	1	4	4	0	3
TOTAL	**1,080**	**1,065**	**984**	**471**	**435**	**432**	**303**	**304**	**305**

Appendix 6. Definitions of Important Terms and Variables

Certified Death:

Death included in the Department of Health and Senior Services, Missouri Center for Health Statistics (MCHS) mortality file, **reported by the death certificate.**

Missouri Incident Death:

Death within Missouri of a child younger than 18 years. On the basis of data from the CFRP Data Form 1 or Data Form 2, one of the following is true:

- The child died as a result of an injury which occurred in Missouri.
- The child died as a result of a natural (non-injury) cause which occurred, or is assumed to have occurred, within Missouri. (This excludes deaths due to illness or other natural cause which occurred outside Missouri; e.g., a non-Missouri residence.)
- The child was born in Missouri and died as a newborn (within ten days of birth) without having left the state.

CFRP Cause of Death:

Cause of death as reported on CFRP Data Forms 1 and 2. The forms include a category for natural cause which includes congenital anomalies, perinatal conditions, and Sudden Infant Death Syndrome (SIDS), sudden unexplained death and injuries classified by the type of agent or force which caused the injury (i.e., vehicular, drowning, firearm, fall, poisoning). The CFRP provides for an indication of whether or not the injury was inflicted, that is, whether it occurred as a result of the action of another person, without regard to intent or purpose of the action. If the case is referred to the CFRP panel for review, Data Form 2 is completed to report the findings of the panel. The Data Form 2 report includes information relevant to possible child abuse and neglect and information related to criminal proceedings.

Mortality File Cause of Death:

The Department of Health and Senior Services Mortality File lists cause of death as reported by the ICD-10 code on Missouri death certificates. The ICD-10 coding classification system includes natural causes such as various diseases, congenital anomalies, perinatal conditions and certain ill-defined conditions (which includes SIDS). The injury classification includes those identified as "accidents" (unintentional), those considered intentional (homicide, suicide) and those with undetermined intent. Injury deaths are further classified by the type of agent or force which caused the injury (i.e., motor vehicle crash, firearm, poisoning, burn, fall, drowning).

Mortality File Manner of Death:

Cause of death reported in the mortality file was formatted to conform to "Manner of Death" variable in death certificate. This includes six categories based on the ICD-10 code: Natural; Accident; Suicide; Homicide; Undetermined; and Pending Investigation.

Appendix 6. Definitions of Important Terms and Variables

Sudden Infant Death Syndrome (SIDS):

Sudden death of an infant under one year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of death scene and review of clinical and social history.

- Morality File SIDS: Death by SIDS, as defined operationally by being reported in the mortality file associated with the ICD-10 code 7980.
- CFRP SIDS: Death by SIDS, as defined operationally by being reported in the CFRP file, from Data Form 1 and Data Form 2, as due to SIDS.

Sudden, Unexplained Infant Death:

Sudden death of an infant less than one year of age due to unexplained cause, requiring the postmortem examination, scene investigation or review of social and medical history. Defined operationally by being reported as sudden, unexplained death on Data Form 1.

Reviewable Death:

Death which has been reported by Data Form 1 as requiring review by the CFRP panel, whether or not the review has yet been completed and reported. The Data Form 1 report is required for all child deaths that occur in Missouri, and includes an indication of whether a review of that death will be required. If Data Form 1 indicates a reviewable death, Data Form 2 should be completed after the review.

Reviewed Death:

Death that has been reviewed by a local CFRP panel and reported on Data Form 2.

Mortality File County of Death:

The county, reported in the mortality file, in which the death was officially recorded. May be a Missouri or non-Missouri county.

CFRP County of Death:

The county, reported by the Data Form 1 and Data Form 2, in which the death occurred. Only deaths in Missouri are included in the CFRP database.

CFRP County of Incident:

The county, reported by Data Form 1 and Data Form 2, in which the fatal illness, injury or event occurred. If the county of incident is a Missouri county, the death is by definition a Missouri incident death. If the county of the incident is outside the state of Missouri, the death is by definition not a Missouri incident death. If the county is in Missouri, but the county of incident is not, only identifying information (Section A of Data Form 1) is requested.

Appendix 6. Definitions of Important Terms and Variables

CFRP County of Residence:

The county, reported by Data Form 1 and Data Form 2, as the county of decedent's residence may be a Missouri or non-Missouri county. If the child is a newborn, the newborn's county of residence is the mother's county of residence.

CFRP Region:

Location, reported by Data Form 1 and Data Form 2, in which the fatal illness, injury or event occurred, formatted to conform to the seven geographic regions defined for the CFRP program.

Children's Division Child Abuse/Neglect (CA/N):

Death for which the Children's Division reports probable cause finding for child abuse or neglect. Probable cause may result from Children's Division investigation or court adjudication. Abuse refers to physical, sexual or emotional maltreatment or injury inflicted on a child, other than accidentally, by those responsible for the child's care, custody and control. Neglect refers to failure by those responsible for the child's care, custody and control to provide the proper or necessary support, education, nutrition, medical care or other care necessary for the child's well-being.

CFRP Fatal Child Abuse and Neglect:

Child death resulting directly from inflicted physical injury and/or negligent treatment by parent or caretaker, regardless of motive or intent.

Mortality File Child Abuse/Neglect:

Death for which the ICD-10 code in the mortality file indicates abuse or neglect. Relevant ICD-10 codes are 904.0, 967 and 968.4. These abuse/neglect deaths are usually under-reported relative to those by the Children's Division as substantiated child abuse or neglect.

Mortality File Homicide Death:

Manner of death due to homicide, as reported by ICD-10 codes 960-979.

Mortality File Suicide Death:

Manner of death due to suicide, as reported by ICD-10 codes 950-959.

Mortality File Autopsy:

Indication from mortality file that decedent was autopsied.

CFRP Autopsy:

Indication from CFRP file that decedent was autopsied and how the autopsy was paid for.

Appendix 7. Death Certificate Manner of Death

(Summarized from: *A Guide for Manner of Death Classification,* draft presented to the National Association of Medical Examiners, September 24, 2001, prepared by Randy Hanzlick, M.D., John Hunsaker III, M.D., and Gregory J. Davis, M.D.)

All states have a standard death certificate that is based upon a model certificate called the US Standard Certificate of Death. The *certifier of death* is the physician, medical examiner or coroner who completes the cause of death section of the certificate that also includes details about the circumstances surrounding the death. Manner of death is one of the items that must be reported on the death certificate and a classification of death based on the circumstances surrounding a particular cause of death and how that cause came into play. In most states, the acceptable options for manner of death classification are: Natural, Accident, Suicide, Homicide and Undetermined.

The death certificate is used for two major purposes. One is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that the death has occurred, but **not** as legal proof of the cause of death. The second major purpose of the death certificate is to provide information for mortality statistics that may be used to assess the nation's health, cause of morbidity and mortality and developing priorities for funding and programs that involve public health and safety issues.

Manner of death is an American invention. A place to classify manner of death was added to the US Standard Certificate of Death in 1910. It was added to the death certificate by public health officials to assist in clarifying the circumstances of death and how an injury was sustained - not as a legally binding opinion. In general, the certifier of death completes the cause of death section and attest that, *to the best of the certifier's knowledge,* the person state died of the cause(s) and circumstances reported on the death certificate. Information on the death certificate may be changed, if needed.

There are basic, general "rules of thumb" for classifying manner of death.

- Natural deaths are due solely or nearly totally to disease and/or the aging process.
- Accident applies when an injury or poisoning occurred without intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self-harm or cause the death of one's self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm or death. Intent to kill is a common element but is **not** required for classification as homicide.
- Undetermined is used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death when all available information is considered.

In evaluating the manner of death in cases involving external causes or factors (such as injury or poisoning), injuries are often categorized as "intentional" (such as inflicted injury in child abuse) or "unintentional" (such as falling from a building). Intent is much more apparent in some cases than others and it is often difficult to assess a victim's or perpetrator's intent. The concept of "voluntary acts" or volition is helpful. In general, if a person's death results at the "hands of another" who committed a harmful volitional act directed at the victim, the death may be considered a homicide from the death investigation standpoint.

State Technical Assistance Team
Child Fatality Review Program

PO Box 208
Jefferson City, MO 65102-0208
(573) 751-5980
800-487-1626