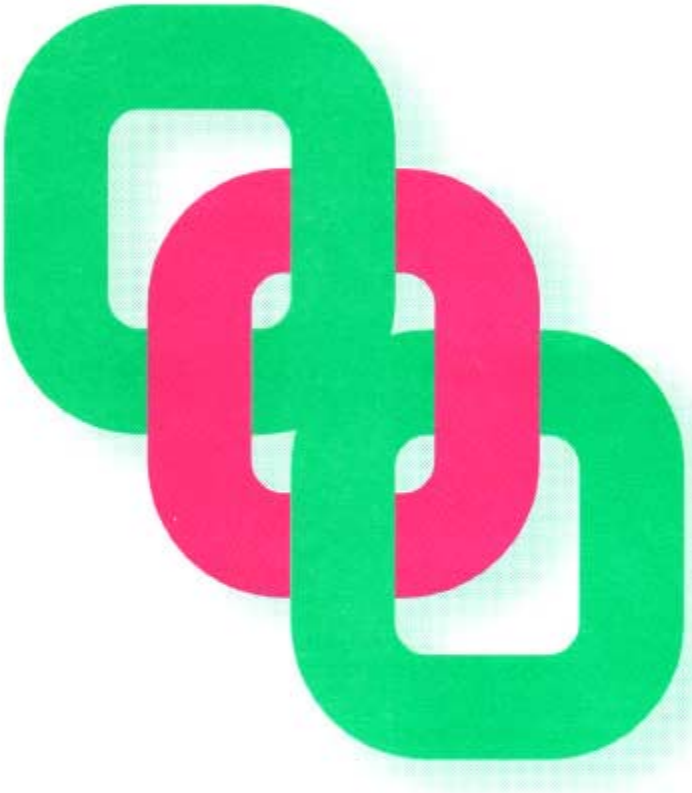
Colorado Child Fatality Review Committee

CHILD FATALITIES IN COLORADO, 1990-1994



Colorado Department of Public Health & Environment

Colorado Department of Human Services

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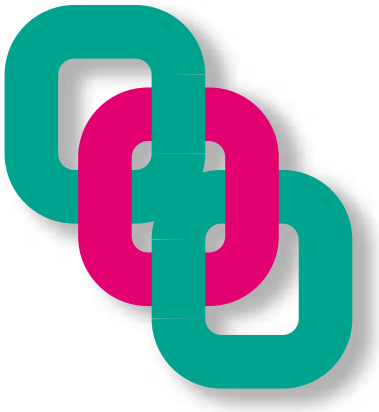

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Executive Summary

The Colorado Child Fatality Review Committee is a multidisciplinary group of professionals representing public health, medicine, law and law enforcement, child welfare, forensics, mental health, and other special interests related to the health and safety of children. The committee has been reviewing all child deaths in Colorado since 1989 with the following goals:

- To describe trends and patterns of child death in Colorado.
- To identify and investigate the prevalence of risk factors for child death.
- To characterize high-risk groups in terms compatible with the development of public policy.
- To evaluate the service and system responses to children and families who are at high risk and to offer recommendations for improvement in those responses.
- To improve the quality and scope of data necessary for child death investigation and review.

Specific benefits have resulted from the child fatality review process. These include, but are not limited to, a better understanding of how children are dying in Colorado, greater accountability among professionals, participation in the development of prevention strategies, statewide child death investigation training, stimulation of policy assessment, and improvement in dialogue with the media.

During the years 1990-94, 3,612 children under the age of 17 died in Colorado. Over ninety percent of the children who died in Colorado were Colorado residents. The mortality rate per 100,000 resident population ages 0-16 decreased from 90.5 in 1990 to 72.8 in 1994. A portion of that decline is due to a decrease in Sudden Infant Death Syndrome in 1994.

Approximately sixty percent of the children who died were male, and this percentage remained stable over the five-year period. The majority of deaths each year occurred among infants under one year of age. However, the rate of death for that age group declined from 963.0 per 100,000 infant population in 1990 to 724.6 per 100,000 in 1994. The 15-16 year age group had the next highest rate with an average of 71.8 per 100,000 population in that age group. Ages 1-4, 10-14, and 5-9 followed with average rates of 42.3, 26.9, and 18.2 per 100,000 population respectively for those age groups.

Blacks and Hispanics were both overrepresented in death compared to their proportions in the population. The average rates of death per 100,000 population were 165.9 for blacks, 123.6 for American Indians, 106.0 for Hispanics, 73.4 for white, non-Hispanics, and 45.3 for Asians.

Approximately three-quarters of the fatalities in each year were signed out as natural manner of death, although the percent of these deaths decreased in each age group, ranging from 94.5 percent of the fatalities in infants under one year of age to 22.5 percent of the fatalities in the 15-16 year age group.

More than eighty percent of deaths to infants under one year of age were attributed to perinatal conditions, congenital anomalies, and Sudden Infant Death Syndrome.

Injuries (including poisoning) were the listed cause of death in 23.7 percent of the cases. These account for most of the 25.4 percent of deaths which were determined by the committee to be preventable. Rates of preventable deaths were higher among accidental than other manners of death, males than females, ages 15-16 years and under one year than other age groups, and blacks and Hispanics than white, non-Hispanics.

The largest number of unintentional injury deaths and more than a third of preventable deaths are related to motor vehicles. These include cases in which the child is a pedestrian, a bicyclist, a passenger, or the driver of a motor vehicle. Different age groups have varying proportions of unintentional injury causes of death, but the most common causes after motor vehicle are drowning, suffocation, fires, falls, firearms, and choking. All of these causes of death suggest particular prevention strategies, and understanding their distribution in the population can help in targeting those strategies.

Deaths due to intentional injuries range from child abuse deaths of infants and small children to suicides and homicides, many firearm-related, in the older age groups. Rates for males are significantly higher than for females in each of these categories, and rates are higher for older children in all of these categories except for abuse.

In this report, deaths classified as due to maltreatment can be related to abuse, neglect, or both. Just over half of these deaths were signed out as homicides, with the remainder being accidental, undetermined manner, or natural. In 87 percent of the maltreatment fatalities, the perpetrator was the mother, the father, or the mother's boyfriend.

Prior to 1993, the committee reviewed all deaths to children ages 0-16 years. In 1993, 17-year-olds were added to the review, and this group is described separately in this report due to issues of comparability. Almost one half of the deaths in this age group were the result of unintentional injuries, primarily related to motor vehicles. Eighty percent of the fatalities in this age group were determined to be preventable.

Acknowledgments

The Colorado Child Fatality Review Committee exists only because our committee members volunteer hundreds of hours annually. We gratefully acknowledge their dedication and commitment.

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This report is published by the Colorado Department of Human Services and the Colorado Department of Public Health and Environment with a grant from the National Center for Child Abuse and Neglect Administration for Children, Youth and Families, U.S. Department of Health and Human Services.

Background

History

In January 1989, the Department of Health (now Public Health and Environment) and the Department of Social Services (now Human Services) jointly formed an ad hoc Child Fatality Task Force after becoming concerned that the child death statistics kept by each department did not accurately reflect nor adequately describe the circumstances of child deaths.

A multidisciplinary group of forty professionals were invited to discuss concerns about child deaths. The group included representatives from medicine, the law, public health, social services, and coroners. This diverse group recommended the establishment of a formal child death review process.

An interagency agreement between the Department of Health and the Department of Social Services formalized the Colorado Child Fatality Review Committee (CFRC). Confidentiality was addressed through the development of policies and procedures. The goal was to ensure that the content of the records used in the review process, for example, medical, social services, and autopsy reports, was protected.

Goals

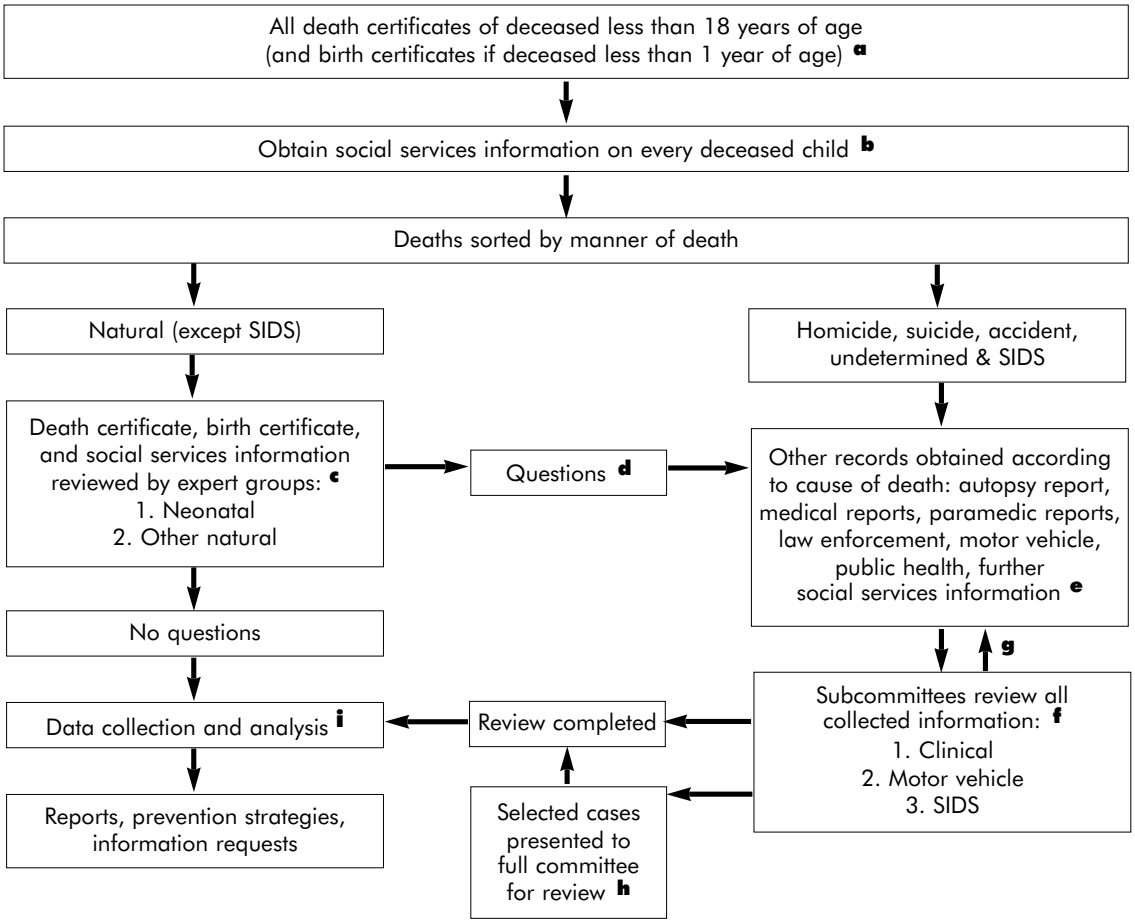
- To describe trends and patterns of child death in Colorado.
- To identify and investigate the prevalence of risk factors for child death.
- To characterize high-risk groups in terms compatible with the development of public policy.
- To evaluate the service and system responses to children and families who are at high risk and to offer recommendations for improvement in those responses.
- To improve the quality and scope of data necessary for child death investigation and review.

Procedures

Because the CFRC is a review, not an investigative, team, analysis occurs about a year after death. More information is then available. Because the request for an agency's information is accompanied by an invitation to attend the case review, useful relationships and lines of communication have been established.

The flow chart on page 4 details our procedure for child death review.

Colorado Child Fatality Review Process



Notes:
Colorado Child Fatality Review Process

a. Death certificates are obtained through the Colorado Department of Public Health and Environment, Division of Health Statistics and Vital Records. Birth certificates are also found through Vital Records.

b. Social services information is obtained by searching two statewide computer data base systems: (1) Child Welfare Services Tracking (CWEST), which has data on all reported cases of suspected abuse or neglect; and (2) Central Registry, which has information on all founded cases of abuse or neglect. The data base systems are searched by child's name, any known AKAs, siblings' names, and parents' names.

c. "Neonatal" expert group reviews all natural child deaths occurring at less than 28 days of age. "Other Natural" expert group reviews all other natural manner deaths (except SIDS).

d. If the expert groups have questions about any death that has been signed out as natural manner (except SIDS), the case is passed to the clinical subcommittee for more in-depth review. The questions are:
- Inadequate or inaccurate death certificate?
- Inadequate death investigation?
- Access to/adequacy of medical care?
- Preventable death?

e. Records (autopsy, medical records, paramedic, law enforcement, motor vehicle, public health, and further social services information) are obtained as necessary and available for review by clinical and other subcommittees.

f. "Clinical" subcommittee reviews all homicide, suicide, accident (except motor vehicle-related), and undetermined manner deaths, as well as any natural, motor vehicle, or SIDS deaths referred back from expert and other clinical groups. "Motor Vehicle" subcommittee reviews all motor vehicle-related deaths. "SIDS" subcommittee reviews all SIDS deaths.

g. On occasion, the clinical subcommittee review raises more questions and further information is requested.

h. Cases selected for presentation to the full Child Fatality Review Committee are: all cases of neglect or abuse; cases which highlight system failures or policy issues (the committee may recommend strategies for avoiding such failures in the future); some cases which suggest preventive strategies; cases which suggest new death patterns; and cases for which the clinical subcommittee requests the broader professional expertise of the full committee.

i. Data is collected and analyzed through the data subcommittee and the Colorado Department of Public Health and Environment. Preventable deaths precipitate collection of additional data. See appendix for data collection forms.

Benefits of Child Fatality Review

- Child fatality review has led to greater accountability. The realization that a committee is reviewing their work has led to greater awareness of accountability among professionals in all disciplines. Law enforcement, district attorneys, coroners, medical personnel, and social services have the knowledge that another entity besides the local agency is reviewing materials related to child deaths and will raise questions where needed in terms of process, policies, and outcomes. For example, the committee raised serious questions about the competencies of a Child Protective Services worker and supervisor after receiving information that the county agency did not have. This led to upper administration involvement in the associated case.

- There is a better account of how children are dying in Colorado than prior to death review when Vital Statistics showed a much diminished picture relative to child abuse and neglect deaths. There are also more data available about those deaths which have been determined to be preventable.

- Information on preventable deaths has been made available to such agencies as Safe Kids and Colorado Children's Trust Fund to support decisions about where their prevention dollars might best be targeted. As a result, there has been extensive education provided on "Never Shake a Baby" and increased emphasis on home visitation programs. Specifically, we found that a large number of infants who died due to abuse had never been seen by Child Protective Services. Increased efforts are needed to make newborns and their families more visible for intervention.

- Multidisciplinary statewide training is underway for law enforcement, child protective services workers, coroners, and other professionals in the investigation of child deaths. This was a direct outcome of the review process when the need for further training and coordination became apparent in many of the cases. In addition to the training, presentations have been given to the state sheriffs' association and public health agencies about committee activities and findings.

- There are five local child fatality review teams - in Denver, El Paso, and Pueblo counties and regional teams centered in Mesa and La Plata counties - which are in either the planning or implementation stages. The state review committee has provided support and information to these local teams.

- Policy questions have been raised about how Child Protective Services is responding to cocaine-affected newborns. There is a great variation in response. Additionally, policy issues have been raised in terms of family preservation services. Are they being targeted to the most appropriate families? Are the providers of the services trained in child protection issues and capable of assessing for safety when circumstances change? Another area of interest is the use of relatives for placement of surviving siblings in child death cases. When is this appropriate and has Child Protective Services completed a thorough assessment prior to placement with relatives?

- Increased education or understanding of agency roles and responsibilities has resulted and shared values have been established. The value of interagency cooperation has been exhibited in the structure and multidisciplinary nature of this committee, and committee members both are and have resources available as a result of contacts made within the committee. Linkages of prevention efforts among agencies and systems has also resulted.

- A dialogue has been established with a local newspaper about the value of including prevention messages in articles about childhood injuries or deaths. This project is being taken to the state level. Clarification of secular press misinterpretations and public information about specific issues has been provided.

- Other specific benefits have included product safety campaigns, improvement in the process for completion of death certificates, increased focus on education and training related to SIDS deaths, and assistance in child death investigations. Consultation and support have been provided to other states that are in the process of developing either local or state teams.

Local Review

While a state review committee can provide for a review of systemic problems, identification of policy issues, and statewide data collection, it cannot bring the same vitality to the area of prevention which local review processes can. Bringing agencies together at a community level offers the greatest potential for strengthening intervention and prevention efforts on behalf of children and families. The capacity to translate review into action can best be realized at the local level.

Local child fatality review teams are formed for a variety of purposes. The most common goals for local team reviews are:

- To improve a community's response to at-risk families.
- To actively seek to identify and prevent those social and family circumstances which contribute to child fatalities.
- To promote cooperation and communication among agencies.
- To identify the causes of children's deaths, where possible.
- To share information about advances in the fields of investigation, intervention, prevention, and prosecution of child death.

Multidisciplinary case review teams seek to achieve these goals by:

- Gathering extensive pertinent information on child fatalities in the local area.
- Reviewing the material to determine what information or responses might have prevented the fatality.
- Developing strategies to address the problems.

The most important aspect of team membership is that the members be multidisciplinary and multi-agency. Many families will have had some contact with a variety of professional disciplines and agencies. The comprehensive review of fatalities must include input from all related agencies. Core members should include a coroner/forensic pathologist, law enforcement officer, district attorney, child protective services representative, public health representative, school official, pediatrician, and a mental health professional.

There is a developmental process involved in any multi-agency collaboration. The first step is to begin to communicate. It is also necessary to avoid defensive postures, to accept that all professionals and agencies have assets and liabilities, and to appreciate that feedback can help to sustain assets and confront liabilities. Professionals participating in such local review processes have found that less "finger-pointing" occurs and a higher level of accountability is maintained for all agencies.

Technical Notes

The data collection instrument for tabulating characteristics of each child's death has itself changed over the past seven years. Many questions on this form have remained, but others have been added, dropped, or altered. The changes have been made to improve the instrument's usefulness.

Some questions on the form require answers that are less objective than numbers, dates, or other facts. Was a death preventable? Was an investigation adequate? Was neglect a factor that contributed to death? We do not use algorithms to answer these questions; the answers are informally deduced through team discussion. When there is not consensus, the answer recorded is "unknown."

Childhood deaths are generally reported in three different ways in this report. The first way is the *absolute number*. This is the *actual number of deaths in a category*. The second way is *percentage*. Unless otherwise stated, this means the *proportion of deaths in a category per 100 childhood deaths*. The third way is *rate*. Unless otherwise stated, this means the *number of deaths in a category per 100,000 resident children in that category*.

Until 1993, all fatalities of children under 17 years of age which occurred in Colorado were reviewed. Beginning with the 1993 fatalities, the age was extended to include all fatalities to children under 18 years of age. The 1993-94 data for 17-year-olds are reported separately to enable comparisons across the years.

In order to ensure confidentiality, it is the policy of the Health Statistics and Vital Records Division of the Colorado Department of Public Health and Environment to publish death data for only those categories in which there have been three or more events. This report conforms to that policy. All cell sizes of less than three have been replaced with the symbol "*." Rates based upon small numbers should be interpreted cautiously. Clusters do not necessarily represent trends.

In a few cases, information was missing for a variable, including gender. This would account for any table in which the numbers do not add up to the total *n* listed for that table. Percentages may not add exactly to 100 percent due to rounding.

In a small number of cases (fewer than 2%), the committee disagreed with the manner of death as listed on the death certificate. When this occurs, the coroner is notified that, for data purposes only, the committee is reclassifying the manner of death. In some cases, the coroner has amended the death certificate as a result of this process. Because the numbers are not large enough to change rates or percentages in any significant way, the original manner of death is used to simplify demographic comparisons.

Note that our statistics include the deaths of children who died in Colorado but who were not residents of Colorado. These comprised 7.4 percent of all childhood deaths.

Child Fatalities in Colorado

Between 1990 and 1994, 3,612 children under the age of 17 died in Colorado. The lowest number of deaths occurred in 1994 when the number of SIDS deaths dropped dramatically. The child fatality rate per 100,000 population under 17 years of age in Colorado decreased each year from 1990 to 1994. The rate dropped from 90.5 in 1990 to 72.8 in 1994 with an average of 83.8 deaths per 100,000 population. Over ninety percent of the children who died each year in Colorado were also Colorado residents.

Child Fatalities: Colorado 1990-94

Age 0-16 years, n=3,612

		1990	1991	1992	1993	1994	1990-94
Total	Number	745	753	725	733	656	3612
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
	Rate/100,000	90.5	89.5	84.1	82.9	72.8	83.8

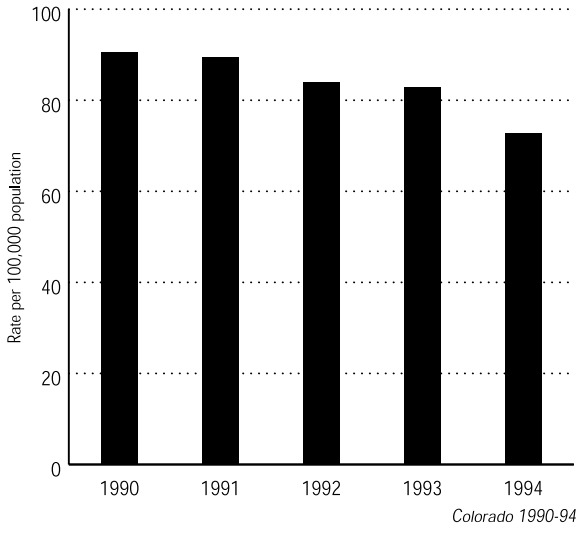
Child Fatalities by State of Residence: Colorado 1990-94

Age 0-16 years, n=3,612

Place of residence		1990	1991	1992	1993	1994	1990-94
Colorado	Number	686	682	680	686	610	3344
	Percent	92.1	90.6	93.8	93.6	93.0	92.6
	Rate/100,000	83.4	81.0	78.8	77.6	67.7	77.5
Not Colorado	Number	59	71	45	47	46	268
	Percent	7.9	9.4	6.2	6.4	7.0	7.4

Child Fatality Rates

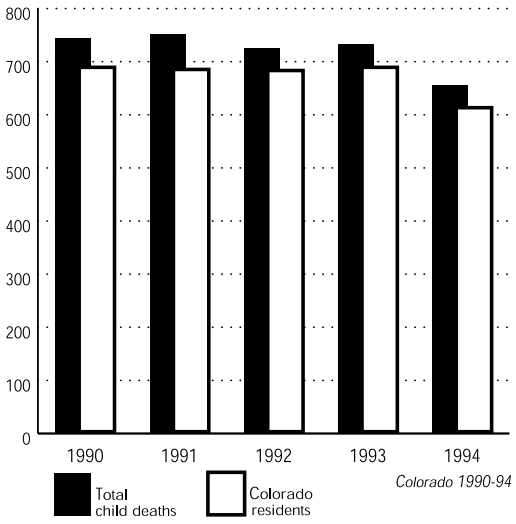
Age 0-16 years, n=3,612



* Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17

Child Fatalities by State of Residence

Age 0-16 years, n=3,612



Demographic Characteristics

The ratio of male to female fatalities was consistent over the five-year period 1990-94. Males represented approximately 60 percent of the deaths, females 40 percent.

A larger proportion of deaths occurred among infants under one year of age (62.8% overall) than among any other age group. The proportion of infant deaths declined over the five-year period as did the rate per 100,000 infant population. The decline in the rate of child fatality is largely accounted for by the decline in the infant death rate. The lowest proportion of deaths (6.6%) as well as the lowest rates (18.2 overall) occurred in the 5-9 year age group.

White, non-Hispanic deaths accounted for approximately two-thirds of the deaths in each year. However, this group represented 74.7 percent of the population under 17 years of age between 1990 and 1994. Thus, the rate of death per 100,000 is the lowest in this racial/ethnic group.

Blacks and Hispanics were both overrepresented in death compared to their representation in the population. Blacks comprised 10.2 percent of deaths compared to 5.1 percent of the population; Hispanics 21.3 compared to 16.8 percent. The highest rates of child fatality occurred among blacks (165.9 per 100,000) followed by Hispanic (106.0) and white, non-Hispanics (73.4). The rate of fatalities among white, non-Hispanic children declined steadily over the five-year period from 81.3 in 1990 to 62.9 in 1994. Less regular declines were found for the black and Hispanic groups.

Demographic Characteristics of Child Fatalities: Colorado 1990-94

Age 0-16 years, n=3,612

Gender		**1990**	**1991**	**1992**	**1993**	**1994**	**1990-94**
Male	Number	439	453	432	440	397	2161
	Percent	58.9	60.2	59.6	60.0	60.5	59.8
	Rate/100,000	104.1	104.9	97.7	97.2	86.0	97.8
Female	Number	306	300	292	293	259	1450
	Percent	41.1	39.8	40.3	40.0	39.5	40.1
	Rate/100,000	76.3	73.1	69.5	68.0	58.9	69.0
Age group (in years)							
<1	Number	506	486	436	449	393	2270
	Percent	67.9	64.5	60.1	61.3	59.9	62.8
	Rate/100,000	963.0	907.3	802.5	822.9	724.6	843.1
1-4	Number	79	88	97	94	87	445
	Percent	10.6	11.7	13.4	12.8	13.3	12.3
	Rate/100,000	38.5	42.7	46.3	43.9	39.9	42.3
5-9	Number	46	51	49	50	42	238
	Percent	6.2	6.8	6.8	6.8	6.4	6.6
	Rate/100,000	18.2	19.9	18.7	18.9	15.7	18.2
10-14	Number	55	69	71	72	63	330
	Percent	7.4	9.2	9.8	9.8	9.6	9.1
	Rate/100,000	24.2	29.0	28.9	28.3	24.1	26.9
15-16	Number	59	59	72	68	71	329
	Percent	7.9	7.8	9.9	9.3	10.8	9.1
	Rate/100,000	69.7	67.2	78.9	71.2	71.6	71.8

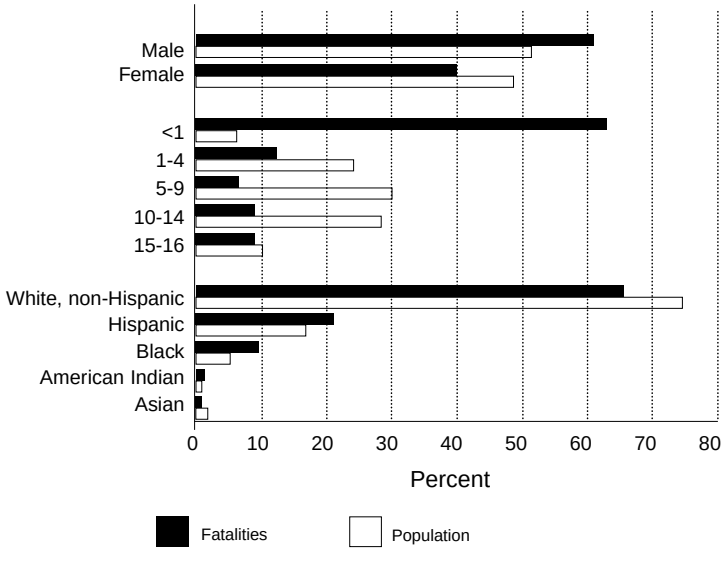
Demographic Characteristics of Child Fatalities: Colorado 1990-94

Age 0-16 years, n=3,612

Race/Ethnicity		1990	1991	1992	1993	1994	1990-94
White, non-Hispanic	Number	500	500	467	474	423	2364
	Percent	67.3	66.5	64.5	64.8	64.7	65.6
	Rate/100,000	81.3	79.4	72.4	71.8	62.9	73.4
Hispanic	Number	151	147	175	157	139	769
	Percent	20.3	19.5	24.2	21.4	21.3	21.3
	Rate/100,000	109.0	104.0	120.8	105.6	91.3	106.0
Black	Number	74	76	67	75	76	368
	Percent	10.0	10.1	9.3	10.2	11.6	10.2
	Rate/100,000	176.4	176.9	151.1	164.2	162.0	165.9
American Indian	Number	8	21	7	16	10	62
	Percent	1.1	2.8	1.0	2.2	1.5	1.7
	Rate/100,000	81.4	212.7	69.7	157.6	97.3	123.6
Asian	Number	10	8	8	10	6	42
	Percent	1.3	1.1	1.1	1.4	.9	1.2
	Rate/100,000	56.4	44.4	43.3	52.7	30.8	45.3

Demographic Characteristics of Child Fatalities

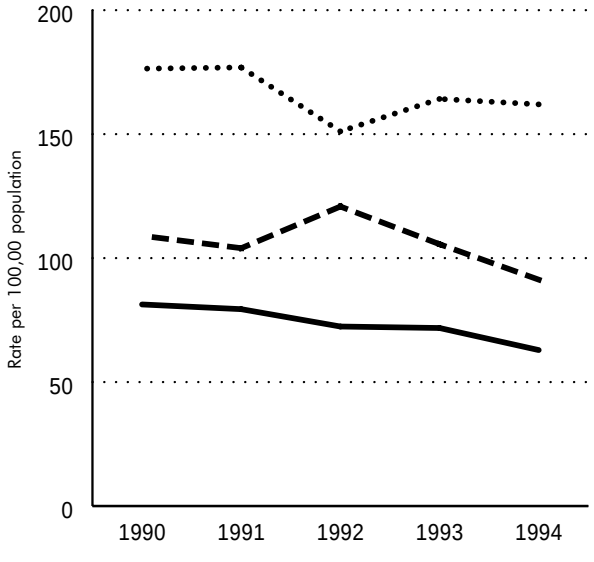
Age 0-16 years, n=3,612



Colorado 1990-94

Child Fatality Rates*

Age 0-16 years, n=3,612



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

County of Residence

Not surprisingly, the Colorado counties with the largest populations of children have the highest number of child fatalities. Residents of the ten most populated counties represented 82.9 percent of the fatalities to residents. Counties in Colorado range from urban and densely populated to rural with very small populations. A single death in a county with a very small population can impact the death rate dramatically. For this reason, rates are only listed for those counties that had an average of three or more deaths per year.

Child Fatalities by County of Residence: Colorado 1990-94

Age 0-16 years, n=3,344

County of Residence		1990	1991	1992	1993	1994	1990-94
Denver	Number	119	120	130	113	104	586
	Rate/100,000	120.8	117.7	123.6	103.7	96.0	112.1
El Paso	Number	103	106	107	97	82	495
	Rate/100,000	98.6	99.1	96.8	85.7	70.1	89.7
Jefferson	Number	85	69	75	79	64	372
	Rate/100,000	76.9	61.6	65.7	67.9	54.3	65.2
Arapahoe	Number	57	70	67	80	72	346
	Rate/100,000	56.2	67.4	62.7	73.3	64.8	65.0
Adams	Number	75	65	68	70	57	335
	Rate/100,000	101.9	86.2	88.3	88.9	71.0	87.0
Larimer	Number	26	40	43	25	31	165
	Rate/100,000	57.7	86.5	91.1	51.9	62.8	69.9
Boulder	Number	28	34	26	19	30	137
	Rate/100,000	56.5	66.8	49.5	34.9	53.6	52.0
Weld	Number	26	31	22	29	22	130
	Rate/100,000	73.5	86.3	59.9	77.8	58.5	71.1
Pueblo	Number	33	20	17	24	29	123
	Rate/100,000	107.3	64.7	55.0	77.5	92.7	79.4
Mesa	Number	18	20	18	12	16	84
	Rate/100,000	75.5	82.1	73.5	48.3	63.2	68.4

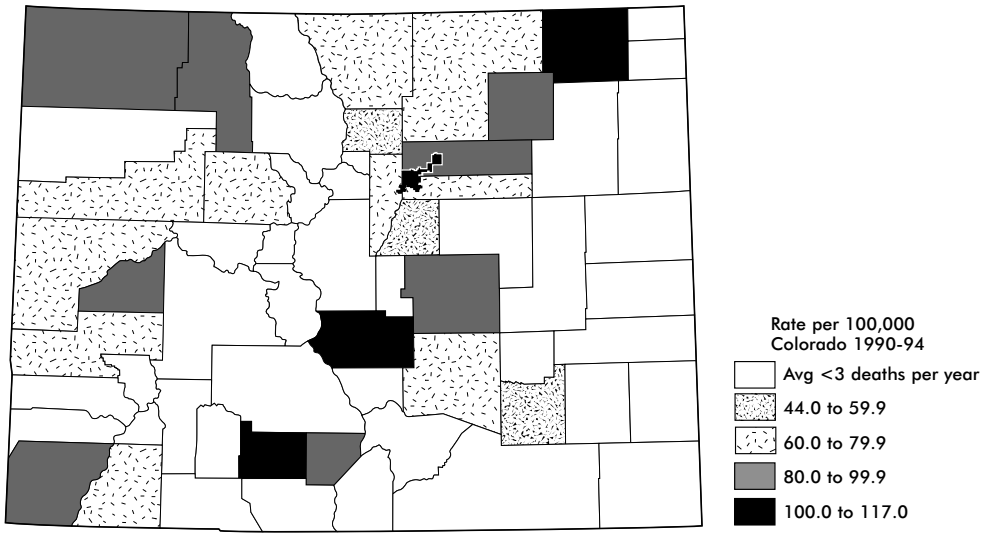
County of residence	Total child fatalities	County of residence	Total child fatalities	County of residence	Total child fatalities
Adams	335	Fremont	36	Morgan	27
Alamosa	19	Garfield	30	Otero	15
Arapahoe	346	Grand	7	Park	6
Archuleta	5	Gunnison	10	Phillips	4
Baca	4	Jackson	5	Pitkin	7
Boulder	137	Jefferson	372	Prowers	9
Chaffee	6	Kit Carson	6	Pueblo	123
Clear Creek	11	Lake	3	Rio Blanco	7
Conejos	14	La Plata	25	Rio Grande	16
Costilla	6	Larimer	165	Routt	15
Crowley	5	Las Animas	10	Saguache	5
Delta	23	Lincoln	4	Sedgwick	3
Denver	586	Logan	26	Summit	11
Douglas	48	Mesa	84	Teller	11
Eagle	23	Moffat	17	Washington	6
Elbert	11	Montezuma	26	Weld	130
El Paso	495	Montrose	22	Yuma	10

Counties not listed had fewer than three child fatalities 1990-94

County of residence	Total fatalities	Annual average	Rate per 100,000
Logan	26	5.2	117.0
Denver	586	117.2	112.1
Rio Grande	16	3.2	101.8
Fremont	36	7.2	100.5
Moffat	17	3.4	96.5
Alamosa	19	3.8	96.3
Delta	23	4.6	91.3
Montezuma	26	5.2	91.0
El Paso	495	99.0	89.7
Adams	335	67.0	87.0
Routt	15	3.0	85.7
Morgan	27	5.4	81.6
Pueblo	123	24.6	79.4
Eagle	23	4.6	77.1
Garfield	30	6.0	71.5
Weld	130	26.0	71.1
Larimer	165	33.0	69.9
Mesa	84	16.8	68.4
Montrose	22	4.4	66.2
Jefferson	372	74.4	65.2
Arapahoe	346	69.2	65.0
La Plata	25	5.0	60.3
Otero	15	3.0	53.8
Boulder	137	27.4	52.0
Douglas	48	9.6	44.2

Counties not listed annually averaged fewer than three child fatalities 1990-94

Child Fatality Rates by County of Residence
Colorado 1990-94



Manner of Death

The manner of death, as noted on the death certificate, for the 3,612 children under 17 was predominantly natural (74.9% overall) in each year. Accidental manner claimed 16.4 percent, homicide 3.9 percent, and suicide 3.0 percent. Males were more likely to have accidental, suicide, and homicide manners of death (18.4%, 3.8%, and 4.2% of male deaths, respectively) than were females.

Manner of death changed markedly with age. Natural deaths were most likely in the younger children. Ninety-five percent of infant deaths were natural, while only 23 percent of children ages 15-16 years died naturally. Accidents accounted for more than 40 percent of deaths in age groups 5-9, 10-14, and 15-16. Intentional injuries (homicide and suicide) accounted for 32 percent of deaths for ages 15-16.

Manner of death also varied by race/ethnicity. For natural deaths and homicides, blacks had the highest rates, followed by Hispanics. This was reversed for accidental deaths, with Hispanics having the highest rates, followed by blacks. White, non-Hispanics had the lowest rates for these manners. Rates did not vary greatly for suicide. White, non-Hispanics had slightly higher rates than Hispanics, with rates for blacks slightly lower than those for Hispanics. See Technical Notes for explanation of manner of death designation.

Child Fatalities by Manner of Death: Colorado 1990-94

Age 0-16 years, n=3,612

Manner of death		1990	1991	1992	1993	1994	1990-94
Natural	Number	585	584	520	536	481	2706
	Percent	78.5	77.6	71.7	73.1	73.3	74.9
	Rate/100,000	71.1	69.4	60.3	60.6	53.4	62.8
Accident	Number	107	112	128	133	114	594.0
	Percent	14.4	14.9	17.7	18.1	17.4	16.4
	Rate/100,000	13.0	13.3	14.8	15.0	12.6	13.8
Suicide	Number	20	20	30	19	21	110.0
	Percent	2.7	2.7	4.1	2.6	3.2	3.0
	Rate/100,000	2.4	2.4	3.5	2.2	2.3	2.6
Homicide	Number	21	29	33	32	27	142.0
	Percent	2.8	3.9	4.6	4.4	4.1	3.9
	Rate/100,000	2.6	3.4	3.8	3.6	3.0	3.3
Undetermined	Number	12	8	14	13	13	60.0
	Percent	1.6	1.1	1.9	1.8	2.0	1.7
	Rate/100,000	1.5	1.0	1.6	1.5	1.4	1.4

Child Fatalities by Manner of Death: Colorado 1990-94

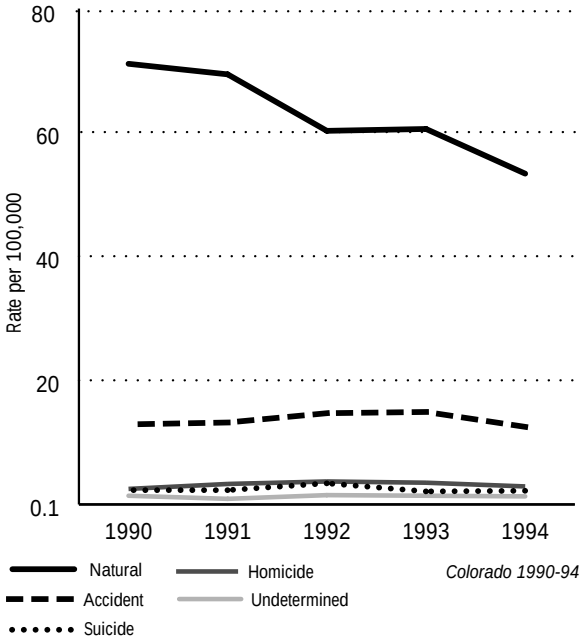
Age 0-16 years, n=3,612

		1990		1991		1992		1993		1994		1990-94		
Gender		**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**Rate**
Male	Natural	326	74.3	335	74.0	313	72.5	299	68.0	278	70.0	1551	71.8	70.2
	Accident	71	16.2	80	17.7	77	17.8	94	21.4	76	19.1	398	18.4	18.0
	Suicide	16	3.6	16	3.5	18	4.2	15	3.4	17	4.3	82	3.8	3.7
	Homicide	16	3.6	18	4.0	18	4.2	21	4.8	17	4.3	90	4.2	4.1
Female	Natural	259	84.6	249	83.0	206	70.5	237	80.9	203	78.4	1154	79.6	54.9
	Accident	36	11.8	32	10.7	51	17.5	39	13.3	38	14.7	196	13.5	9.3
	Suicide	4	1.3	4	1.3	12	4.1	4	1.4	4	1.5	28	1.9	1.3
	Homicide	5	1.6	11	3.7	15	5.1	11	3.8	10	3.9	52	3.6	2.5
Age Group														
<1	Natural	480	94.9	467	96.1	409	93.8	422	94.0	367	93.4	2145	94.5	796.7
	Accident	9	1.8	10	2.1	10	2.3	11	2.4	12	3.1	52	2.3	19.3
	Homicide	8	1.6	7	1.4	6	1.4	7	1.6	6	1.5	34	1.5	12.6
1-4	Natural	46	58.2	55	62.5	58	59.8	46	48.9	50	57.5	255	57.3	24.2
	Accident	28	35.4	21	23.9	31	32.0	39	41.5	27	31.0	146	32.8	13.9
	Homicide	*	*	9	10.2	7	7.2	7	7.4	8	9.2	33	7.4	3.1
5-9	Natural	26	56.5	22	43.1	17	34.7	28	56.0	22	52.4	115	48.3	8.8
	Accident	18	39.1	26	51.0	30	61.2	19	38.0	20	47.6	113	47.5	8.7
	Homicide	*	*	*	*	*	*	*	*	*	*	7	2.9	0.5
10-14	Natural	16	29.1	31	44.9	24	33.8	25	34.7	21	33.3	117	35.5	9.5
	Accident	28	50.9	26	37.7	25	35.2	32	44.4	27	42.9	138	41.8	11.2
	Suicide	8	14.5	8	11.6	14	19.7	10	13.9	10	15.9	50	15.2	4.1
	Homicide	3	5.5	4	5.8	7	9.9	4	5.6	4	6.3	22	6.7	1.8
15-16	Natural	17	28.8	9	15.3	12	16.7	15	22.1	21	29.6	74	22.5	16.1
	Accident	24	40.7	29	49.2	32	44.4	32	47.1	28	39.4	145	44.1	31.6
	Suicide	12	20.3	12	20.3	16	22.2	9	13.2	11	15.5	60	18.2	13.1
	Homicide	6	10.2	7	11.9	12	16.7	12	17.6	9	12.7	46	14.0	10.0
Race/Ethnicity														
White,	Natural	393	78.6	378	75.6	339	72.6	355	74.9	311	73.5	1776	75.1	55.1
non-Hispanic	Accident	77	15.4	86	17.2	85	18.2	85	17.9	76	18.0	409	17.3	12.7
	Suicide	13	2.6	17	3.4	23	4.9	15	3.2	17	4.0	85	3.6	2.6
	Homicide	9	1.8	13	2.6	14	3.0	15	3.2	9	2.1	60	2.5	1.9
Hispanic	Natural	114	75.5	113	76.9	114	65.1	107	68.2	101	72.7	549	71.4	75.6
	Accident	23	15.2	20	13.6	34	19.4	38	24.2	25	18.0	140	18.2	19.3
	Suicide	4	2.6	*	*	7	4.0	*	*	3	2.2	18	2.3	2.5
	Homicide	8	5.3	12	8.2	15	8.6	6	3.8	9	6.5	50	6.5	6.9
Black	Natural	61	82.4	66	86.8	52	77.6	53	70.7	55	72.4	287	78.0	129.4
	Accident	5	6.8	4	5.3	8	11.9	7	9.3	10	13.2	34	9.2	15.3
	Suicide	3	4.1	*	*	*	*	*	*	*	*	5	1.4	2.3
	Homicide	4	5.4	4	5.3	4	6.0	10	13.3	8	10.5	30	8.2	13.5

*Indicates fewer than three events

Child Fatality Rates* by Manner

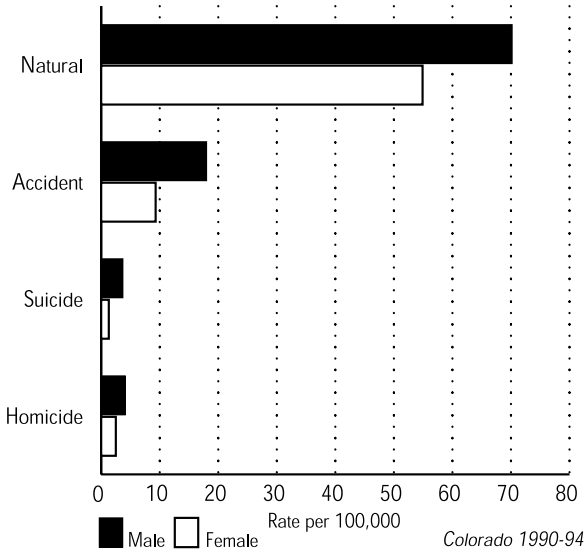
Age 0-16 years, n=3,612



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

Child Fatality Rates* by Manner & Gender

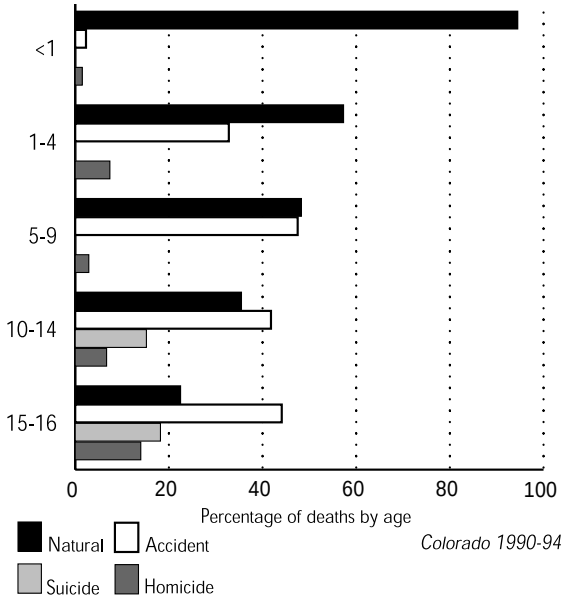
Age 0-16 years, n=3,612



**Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

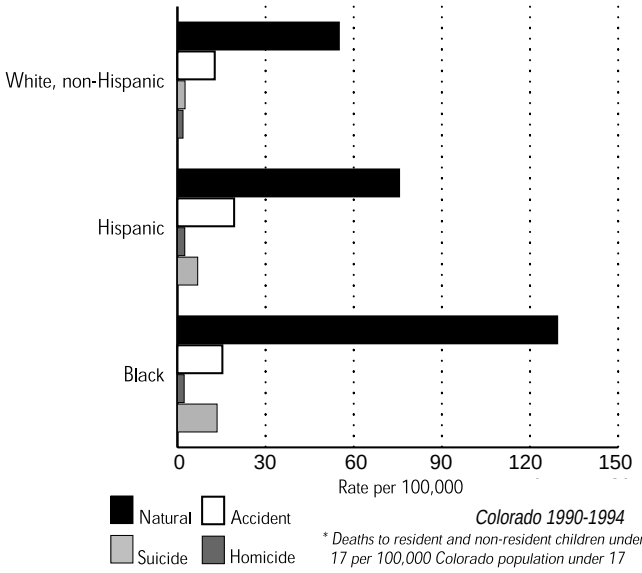
Child Fatalities by Manner & Age

Age 0-16 years, n=3,612



Child Fatality Rates* by Manner & Race/Ethnicity

Age 0-16 years, n=3,612



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

Underlying Cause of Death

The underlying cause of death is determined from death certificate information which is coded according to the International Classification of Diseases (9th Revision) rules. The leading cause of death between 1990 and 1994 for children under 17 was injuries and poisonings (23.7%). Among these, 592 were unintentional injuries and 247 were intentional, including homicide and suicide. Perinatal conditions (23.1%) and congenital anomalies (17.5%) were the next most frequent causes of death. Symptoms and signs, which includes Sudden Infant Death Syndrome (SIDS), accounted for 15 percent of all deaths to children under 17. These four categories accounted for 79 percent of all deaths.

Child Fatalities by Underlying Cause of Death: Colorado 1990-94

Age 0-16 years, n=3,612

	1990		1991		1992		1993		1994		1990-94	
Underlying cause of death (ICD9)	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Injury & poisonings (E800-E999)	151	20.3	166	22.1	190	26.2	187	25.5	163	24.8	857	23.7
Unintentional	105	14.1	119	15.8	127	17.5	130	17.7	111	16.9	592	16.4
Intentional [1]	41	5.5	44	5.9	63	8.7	51	7.0	48	7.3	247	6.8
Undetermined intent	5	0.7	3	0.4	*	*	6	0.8	4	0.6	18	0.5
Perinatal conditions (760-779)	195	26.2	166	22.1	154	21.2	163	22.2	156	23.8	834	23.1
Congenital anomalies (740-759)	139	18.7	136	18.1	125	17.2	115	15.7	117	17.8	632	17.5
Symptoms/signs [2] (780-799)	111	14.9	128	17.0	109	15.0	118	16.1	76	11.6	542	15.0
Nervous system (320-389)	24	3.2	25	3.3	20	2.8	40	5.5	31	4.7	140	3.9
Neoplasms (140-239)	34	4.6	31	4.1	35	4.8	17	2.3	21	3.2	138	3.8
Circulatory system (390-459)	28	3.8	17	2.3	26	3.6	22	3.0	32	4.9	125	3.5
Respiratory system (460-519)	19	2.6	25	3.3	21	2.9	21	2.9	20	3.0	106	2.9
Infections/parasites (001-139)	14	1.9	19	2.5	12	1.7	20	2.7	20	3.0	85	2.4
Endrocrine/metabolism (240-279)	15	2.0	21	2.8	18	2.5	9	1.2	7	1.1	70	1.9
Digestive system (520-579)	10	1.3	8	1.1	5	0.7	8	1.1	4	0.6	35	1.0
All other	5	0.7	9	1.2	10	1.4	13	1.8	9	1.4	46	1.3

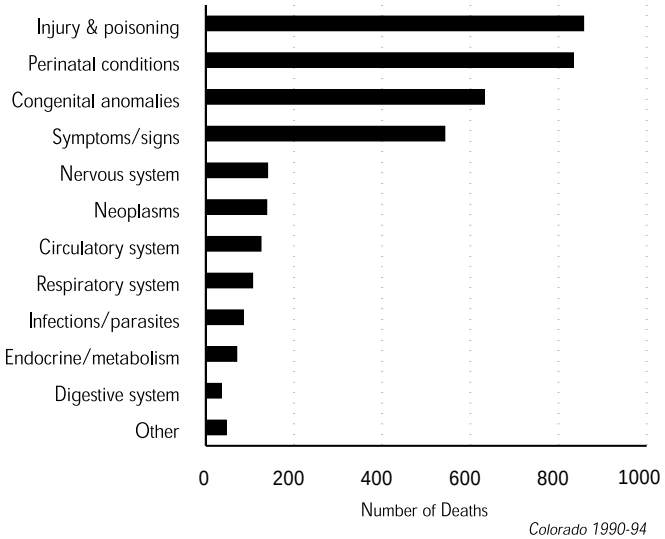
1 Includes homicide and suicide

2 Includes SIDS

* Indicates fewer than three events

Child Fatalities by Underlying Cause of Death

Age 0-16 years, n=3,612



Colorado 1990-94

Perinatal Conditions and Congenital Anomalies

Five perinatal conditions accounted for 70 percent of deaths due to these conditions. The most frequently listed underlying cause of death was a disorder related to short gestation and low birthweight (20.0%), followed by respiratory conditions (17.6%), complications of placenta, cord and membranes (11.6%), maternal complications of pregnancy (11.2%), and respiratory distress syndrome (9.8%). Other less frequently occurring causes include infections, intrauterine hypoxia, and birth trauma.

Congenital anomalies accounted for 632 deaths between 1990 and 1994 among children under 17 years of age. The anomaly most frequently selected as underlying cause related to conditions of the heart (26.4%), followed by chromosomal anomalies (13.3%), respiratory system anomalies (12.2%), nervous system anomalies (10.4%), and circulatory system anomalies (7.6%).

Comments:

When reporting the causes of neonatal deaths in Colorado, it is important to consider the significant contribution to the overall rate offered by extremely immature infants born at the threshold of viability (<750 grams). Since 1990, this group represents the leading factor contributing to neonatal deaths in Colorado, with congenital anomalies in a close second place. Infants of <750 grams account for 0.29 percent of all live births and 42.6 percent of all neonatal deaths. While the survival for this group of infants increases with each additional week of gestation and with increasing birthweight, the overall survival rate remains less than 40 percent. It is also important to recognize that among the congenital anomalies contributing to neonatal deaths, the cardiovascular anomalies are by far the most common ones.

Child Fatalities Related to Perinatal Conditions by Underlying Cause of Death: Colorado 1990-94

Perinatal conditions n=834

Perinatal conditions — underlying cause of death (ICD9)	Number	Percent
Disorders relating to short gestation & unspecified low birthweight (765)	167	20.0
Other respiratory conditions of fetus & newborn (770)	147	17.6
Fetus or newborn affected by complications of placenta, cord & membranes (762)	97	11.6
Fetus or newborn affected by maternal complications of pregnancy (761)	93	11.2
Respiratory distress syndrome (769)	82	9.8
Other & ill-defined conditions originating in the perinatal period (779)	62	7.4
Infections specific to the perinatal period (771)	47	5.6
Intrauterine hypoxia & birth asphyxia (768)	37	4.4
Birth trauma (767)	23	2.8
Fetus or newborn affected by maternal conditions which may be unrelated to present pregnancy (760)	20	2.4
Perinatal disorders of digestive system (777)	18	2.2
Fetal & neonatal hemorrhage (772)	15	1.8
Conditions involving the integument & temperature regulation of fetus & newborn (778)	11	1.3
Fetus or newborn affected by other complications of labor & delivery (763)	6	0.7
Slow fetal growth & fetal malnutrition (764)	3	0.4
Hematological disorders of fetus & newborn (776)	3	0.4
Other	3	0.4

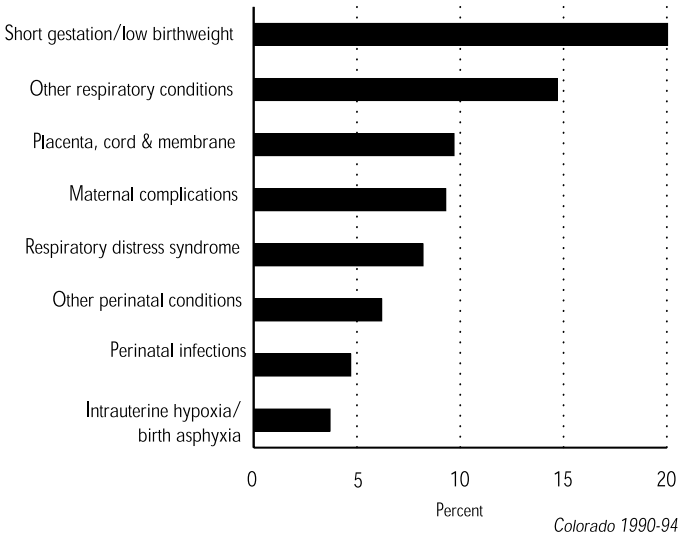
Child Fatalities Related to Congenital Anomalies by Underlying Cause of Death: Colorado 1990-94

Congenital anomalies n=632

Congenital anomalies — underlying cause of death (ICD9)	Number	Percent
Heart (746)	167	26.4
Chromosomal (758)	84	13.3
Respiratory system (748)	77	12.2
Nervous system (742)	66	10.4
Circulatory system (747)	48	7.6
Other & unspecified (759)	42	6.6
Bulbus cordis & cardiac septal closure (745)	41	6.5
Musculoskeletal (756)	38	6.0
Urinary system (753)	25	4.0
Anencephalus & similar anomalies (740)	23	3.6
Digestive system (751)	11	1.7
Spina bifida (741)	6	0.9
Other	4	0.6

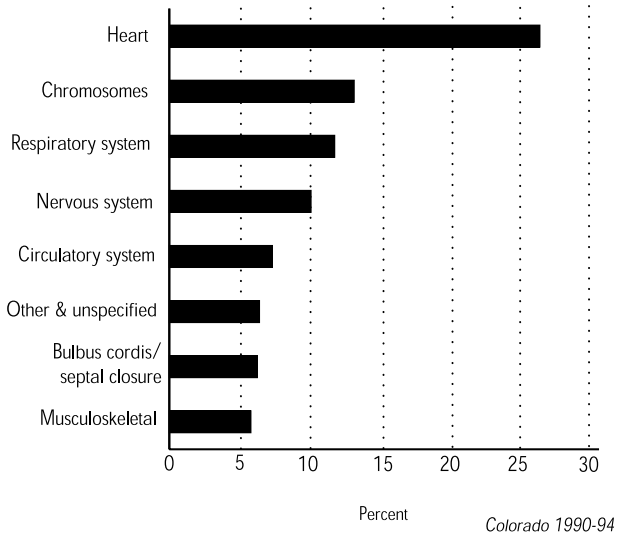
Child Fatalities Related to Perinatal Conditions

n=834



Child Fatalities Related to Congenital Anomolies

n=632



Preventability

A primary function of the Child Fatality Review process is to identify those deaths that were potentially preventable. A preventable death has been defined by the committee as one in which, with retrospective analysis, it is determined that a reasonable intervention (e.g., medical, educational, social, legal or psychological) might have prevented the death. Reasonable is defined by taking into consideration the conditions, circumstances or resources available.

It is not always possible to determine whether or not a death was preventable. In addition to the fatalities that were determined by the committee to be preventable, there are a number of cases each year for which preventability could not be determined, either because of inadequate information collected at the time of death, insufficient information made available to the committee, or no clear consensus among committee members that the death was preventable.

The CFR committee consensus was that one in four deaths to children under 17 was preventable. Preventability varied by manner of death, gender, age, and race/ethnicity. Most natural manner deaths were not considered preventable (2.3% preventable with a decreasing trend over the five years) while virtually all accident, suicide, and homicide deaths were considered preventable (97.6%, 100%, and 99.3% respectively). Deaths to males were more likely to be preventable (28.6%) than were those to females (20.8%). Males were also less likely to have a natural manner of death than were females.

Preventability also increases with the age of the child. Only six percent of infant deaths were considered preventable (with a decreasing trend over the five years) while 78.1 percent of deaths to 15-16 year-olds were preventable. Again, natural manner of death decreases with age for children under 17.

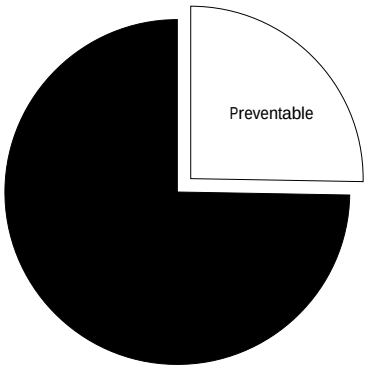
On average, deaths to Hispanic children were more likely than white, non-Hispanic deaths to be considered preventable (29.3% and 25.0% respectively). The difference is largely attributable to the very high preventable proportion of Hispanic child deaths in 1992. Deaths to black children were, however, less likely to be considered preventable (22.8%). Again the lower average proportion is largely due to the 14.5 percent in 1991.

Preventability of Child Fatalities: Colorado 1990-94

Age 0-16 years, n=919

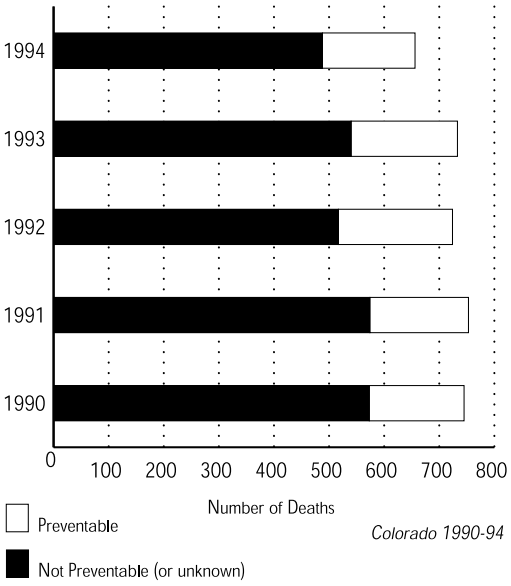
Preventable deaths		**1990**	**1991**	**1992**	**1993**	**1994**	**1990-94**
	Number	172	179	207	193	168	919
	Percent preventable	23.1	23.8	28.6	26.3	25.6	25.4
	Rate/100,000	20.9	21.3	24.0	21.8	18.6	21.3
Manner of death							
Natural	Number	24	13	15	5	4	61
	Percent preventable	4.1	2.2	2.9	0.9	0.8	2.3
	Rate/100,000	2.9	1.5	1.7	0.6	0.4	1.4
Accident	Number	101	111	125	131	112	580
	Percent preventable	94.4	99.1	97.7	98.5	98.2	97.6
	Rate/100,000	12.3	13.2	14.5	14.8	12.4	13.5
Suicide	Number	20	20	30	19	21	110
	Percent preventable	100.0	100.0	100.0	100.0	100.0	100.0
	Rate/100,000	2.4	2.4	3.5	2.2	2.3	2.6
Homicide	Number	20	29	33	32	27	141
	Percent preventable	95.2	100.0	100.0	100.0	100.0	99.3
	Rate/100,000	2.4	3.4	3.8	3.6	3.0	3.3
Undetermined	Number	7	6	4	6	4	27
	Percent preventable	58.3	75.0	28.6	46.2	30.8	45.0
	Rate/100,000	0.9	0.7	0.5	0.7	0.4	0.6

Preventable Child Fatalities
Age 0-16 years, n=919



Colorado 1990-94

Preventable Child Fatalities
Age 0-16 years, n=919



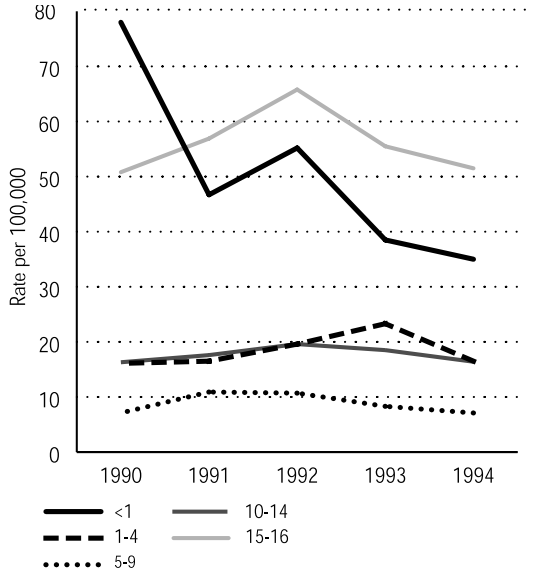
Colorado 1990-94

Gender		**1990**	**1991**	**1992**	**1993**	**1994**	**1990-94**
Male	Number	118	125	124	136	115	618
	Percent preventable	26.9	27.6	28.7	30.9	29.0	28.6
	Rate/100,000	28.0	29.0	28.0	30.0	24.9	28.0
Female	Number	54	54	83	57	53	301
	Percent preventable	17.6	18.0	28.4	19.5	20.5	20.8
	Rate/100,000	13.5	13.2	19.7	13.2	12.1	14.3
Age group							
<1	Number	41	25	30	21	19	136
	Percent preventable	8.1	5.1	6.9	4.7	4.8	6.0
	Rate/100,000	78.0	46.7	55.2	38.5	35.0	50.5
1-4	Number	33	34	41	50	36	194
	Percent preventable	41.8	38.6	42.3	53.2	41.4	43.6
	Rate/100,000	16.1	16.5	19.6	23.3	16.5	18.4
5-9	Number	18	28	28	22	19	115
	Percent preventable	39.1	54.9	57.1	44.0	45.2	48.3
	Rate/100,000	7.1	10.9	10.7	8.3	7.1	8.8
10-14	Number	37	42	48	47	43	217
	Percent preventable	67.3	60.9	67.6	65.3	68.3	65.8
	Rate/100,000	16.3	17.6	19.6	18.5	16.4	17.7
15-16	Number	43	50	60	53	51	257
	Percent preventable	72.9	84.7	83.3	77.9	71.8	78.1
	Rate/100,000	50.8	56.9	65.8	55.5	51.5	56.1

Race/ethnicity		1990	1991	1992	1993	1994	1990-94
White, non-Hispanic	Number	108	128	126	121	107	590
	Percent preventable	21.6	25.6	27.0	25.5	25.3	25.0
	Rate/100,000	17.6	20.3	19.5	18.3	15.9	18.3
Hispanic	Number	39	37	65	46	38	225
	Percent preventable	25.8	25.2	37.1	29.3	27.3	29.3
	Rate/100,000	28.2	26.2	44.9	30.9	25.0	31.0
Black	Number	20	11	14	20	19	84
	Percent preventable	27.0	14.5	20.9	26.7	25.0	22.8
	Rate/100,000	47.7	25.6	31.6	43.8	40.5	37.9

Preventable Child Fatality Rates* by Age Group

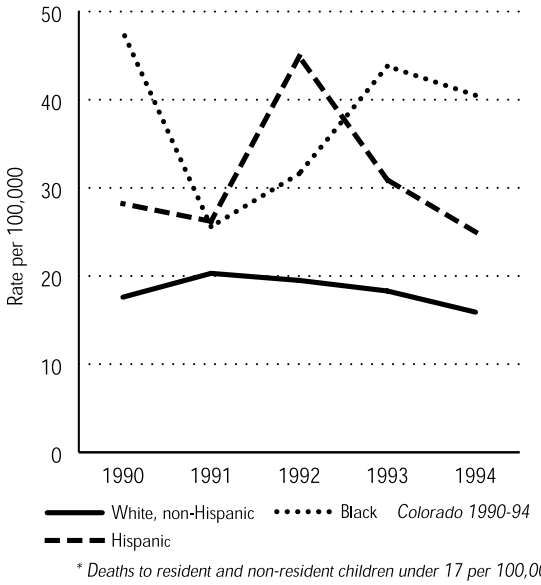
Age 0-16 years, n=919



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

Preventable Child Fatality Rates* by Race/Ethnicity

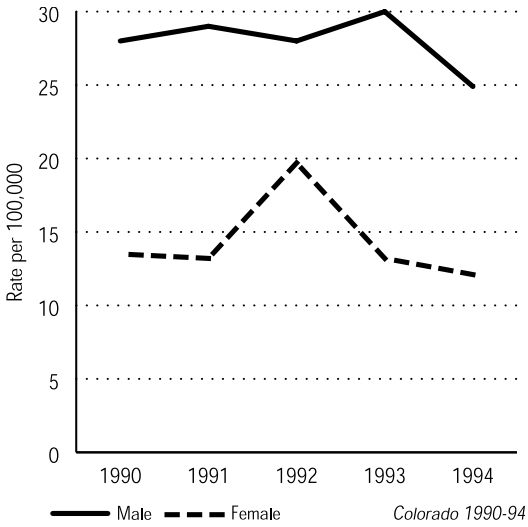
Age 0-16 years, n=919



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

Preventable Child Fatality Rates* by Gender

Age 0-16 years, n=919



** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

Documents and Investigations

One of the functions of the CFR process is to assess the adequacy of documents and investigations related to the death, such as completion of the death certificate and use of the autopsy. The death certificate was considered to be adequately completed in 93.3 percent of all deaths. In general, completion of the certificate improved from 1990 and remained relatively constant over the next four years. On average, an autopsy was performed in 55.6 percent of the cases. The percent was lowest in 1994 (51.5%), a drop from the high of 58.5 percent in 1992.

Comments:

Death certificates are official documents. They are also used in attempts to better understand the causes and circumstances of deaths. For both of these reasons, it is important that they be completed in an accurate and comprehensive manner.

Clinical or historical information may be critical to a correct understanding of a child's cause and manner of death. However, such information may be vague or altogether absent on the death certificate, especially in the sections that pertain to immediate cause of death, underlying cause of death, and other significant conditions. The more complete and accurate the death certificate, the less time must be later spent in tracking down necessary information.

A good rule of thumb is that the cause of death should be stated specifically enough for an independent reviewer to get a sense of what actually occurred.

The Child Fatality Review Committee has seen improvement over time in the way death certificates are filled out. Examples of death certificates that could be improved are:

- cases that have been signed out as natural deaths when the underlying cause of the condition is a traumatic event. For example, a child has been battered so severely that he is reduced to living in a persistent vegetative state. Some years later he dies, and the immediate cause of death is pneumonia. However, the underlying cause of death that rendered him peculiarly susceptible was the direct result of battery. Therefore, even though the immediate cause of death is natural, the underlying cause is related to inflicted trauma, and the death is of homicidal manner.
- cases in which the listed cause of death is very general (such as "congenital heart disease") when information about the specific type of heart disease and operative status would clarify the situation.
- cases in which the cause of death can be understood fully only in the context of the child's other conditions. For example, the immediate cause of death may be bronchopneumonia, but other significant conditions include quadriplegia or cerebral palsy.

Documents & Investigations Related to Child Fatality: Colorado 1990-94

Age 0-16 years, n=3,612

		1990	1991	1992	1993	1994	1990-94
Adequate Death Certificate							
Adequate	Number	646	720	695	675	613	3349
	Percent	89.2	95.6	96.0	92.1	93.4	93.3
Autopsy Performed							
Yes	Number	410	426	424	409	338	2007
	Percent	55.0	56.6	58.5	55.8	51.5	55.6

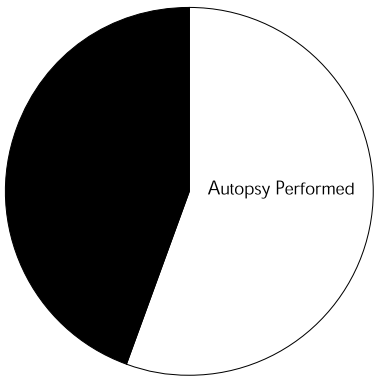
Adequacy of Child Fatality Death Certificates

Age 0-16 years, n=3,612

Colorado 1990-94

Autopsy Performed in Child Fatalities

Age 0-16 years, n=3,612



Colorado 1990-94

Infants

Of the 3,612 children who died during this five-year period, 2,270 (62.8%) were infants. Male infants were more likely to die than female infants (57.3% vs. 42.7%). The infant death rate (deaths per 1,000 live births) was also higher for males than for females (9.5 and 7.4 respectively).

The proportion of infant deaths by race/ethnicity does not reflect the proportion of live births. White non-Hispanics are underrepresented at 64.3 percent compared to 72.6 percent of live births while blacks are overrepresented at 11.4 percent compared to 5.3 percent. Hispanic representation tends to be slightly higher at 21.2 percent compared to 18.1 percent of live births.

Three underlying cause of death categories account for 83.7 percent of all infant deaths. These causes are perinatal conditions (36.4%), congenital anomalies (24.0%), and symptoms and signs including Sudden Infant Death Syndrome (23.3%).

Linking the infant death certificate to the birth certificate for infants born in Colorado allows us to examine maternal characteristics of infants who died compared to mothers of babies who did not die in the first year of life. The results of this linking indicate that mothers of infants who died are at consistently higher risk on a number of factors than are the comparison mothers. Comparisons of mothers of infants who died with mothers of infants who did not die showed the mothers of infants who died to be younger (7.8% versus 4.5% under 18), have less education (25.0% versus 18.0% less than high school), start prenatal care late or not at all (9.3% versus 4.9%), be unmarried (36.3% versus 23.5%), smoke cigarettes during the pregnancy (24.0% versus 15.8%), and drink alcohol during the pregnancy (3.8% versus 2.8%).

Infant Fatalities: Colorado 1990-94

Age <1 year, n=2,270

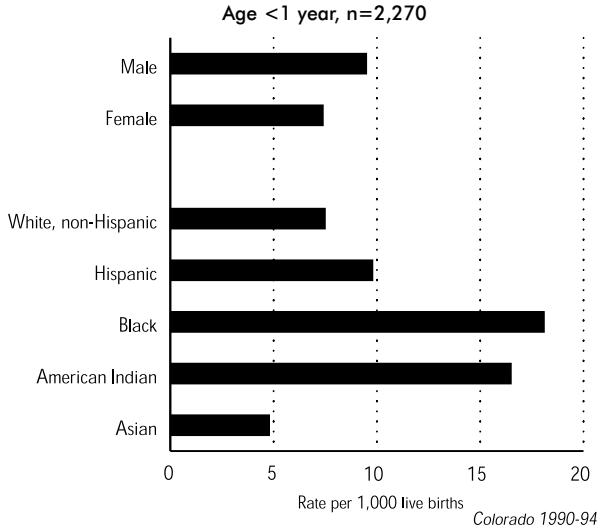
Gender		**1990**	**1991**	**1992**	**1993**	**1994**	**1990-94**
Male	Number	284	280	259	253	225	1301
	Percent	56.1	57.6	59.4	56.3	57.3	57.3
	Rate/1,000 live births	10.4	10.3	9.4	9.2	8.1	9.5
Female	Number	222	206	176	196	168	968
	Percent	43.9	42.4	40.4	43.7	42.7	42.6
	Rate/1,000 live births	8.5	7.9	6.6	7.5	6.4	7.4
Race/ethnicity							
White, non-Hispanic	Number	337	309	275	290	243	1454
	Percent	66.9	63.7	63.2	64.7	62.1	64.3
	Rate/1,000 live births	8.5	7.9	7.1	7.5	6.3	7.5
Hispanic	Number	95	101	106	93	84	479
	Percent	18.8	20.8	24.4	20.8	21.5	21.2
	Rate/1,000 live births	10.5	10.7	10.8	9.3	8.2	9.8
Black	Number	58	54	42	50	53	257
	Percent	11.5	11.1	9.7	11.2	13.6	11.4
	Rate/1,000 live births	20.5	18.9	14.5	17.4	19.5	18.1
American Indian	Number	7	15	5	9	7	43
	Percent	1.4	3.1	1.1	2.0	1.8	1.9
	Rate/1,000 live births	14.7	27.7	8.8	17.3	14.1	16.5
Asian	Number	7	6	7	6	4	30
	Percent	1.4	1.2	1.6	1.3	1.0	1.3
	Rate/1,000 live births	6.4	5.3	5.6	4.8	2.7	4.8

Underlying cause of death (ICD9)	Number	Percent
Perinatal conditions (760-779)	826	36.4
Congenital anomalies (740-759)	544	24.0
Symptoms/signs[1] (780-799)	529	23.3
Injury & poisonings[2] (E800-E999)	86	3.8
Unintentional	[44]	[1.9]
Intentional	[32]	[1.4]
Circulatory system (390-459)	67	3.0
Respiratory system (460-519)	52	2.3
Nervous system (320-389)	44	1.9
Infections/parasites (001-139)	40	1.8
Endocrine/metabolism (240-279)	36	1.6
Digestive system (520-579)	22	1.0
Blood (280-289)	9	0.4
Neoplasms (140-239)	6	0.3
All other	7	0.3

1 Includes SIDS

2 Note that unintentional and intentional are subsets of injury

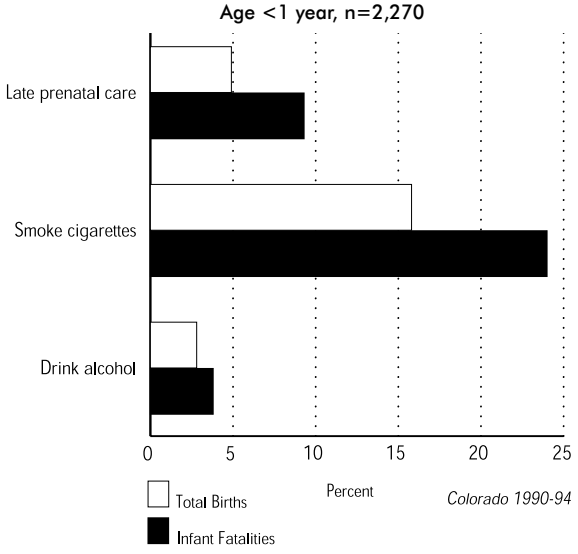
Infant Fatality Rates* by Gender & Race/Ethnicity



** Deaths to resident and non-resident infants under 1 per 1,000 live births in Colorado*

Maternal Characteristics

Maternal Risk Factors



Maternal Characteristics & Risk Factors

	Number	Percent of infant fatalities	Percent of all births
Maternal age			
10-14	9	0.4	0.2
15-17	165	7.4	4.3
18-19	238	10.7	7.3
20-24	625	28.1	24.7
25-29	557	25.1	28.1
30-34	400	18.0	23.8
35-39	193	8.7	9.9
40-44	35	1.6	1.6
Maternal education by grade completed			
0-11	547	25.0	18.0
12	747	34.1	34.5
13-15	464	21.2	23.2
16	204	9.3	15.8
≥17	132	6.0	8.5
Marital status			
Unmarried	809	36.3	23.5
Month prenatal care began			
1-3	1558	73.3	79.2
4-6	372	17.5	16.0
7-9	84	4.0	3.9
None	112	5.3	1.0
Smoke cigarettes			
Yes	507	24.0	15.8
Drink alcohol			
Yes	80	3.8	2.8

Colorado 1990-94

Sudden Infant Death Syndrome

A significant number of infant deaths are attributed to Sudden Infant Death Syndrome (SIDS). However, estimates of the numbers of such deaths vary by reporting source. Child Fatality Review found that 533 infants died of SIDS during the five-year period 1990-94, resulting in a rate of 2.0 per 1,000 live births. The Colorado SIDS Program counts a death as SIDS if it is listed as such in the autopsy report or on the death certificate. The Program identified 557 SIDS deaths over the period. In some cases, the SIDS Program has included a death in their figures, but after review the committee has decided, for data purposes, to classify the death as either from undetermined or other natural causes. The death certificate identified 496 SIDS deaths with the ICD9 code of 798.0. The discrepancy between the numbers from the death certificates and the other reporting sources is accounted for by the rules of coding which mandate that a death cannot be coded as SIDS if any other condition is mentioned on the certificate. Although death certificate numbers are used throughout this report, in this case the numbers from the Child Fatality Review Committee are used because there is a larger difference and because the committee numbers are more representative.

Each of these sources documented a drop in the number of SIDS deaths in 1994. CFR counts dropped from 115 in 1990 to 72 in 1994; Colorado SIDS Program from 119 to 76; and the death certificate from 106 to 66. This represents a 36-38 percent decrease regardless of the source.

Over time the demographics of SIDS deaths remained quite stable. Males represented 62.5 percent of the deaths. White, non-Hispanic infants were underrepresented at 65.9 percent compared to their proportion of births (72.6%). Hispanic SIDS deaths were in proportion to births and blacks were overrepresented (11.8% of SIDS, 5.3% of births). The rate of SIDS among blacks was more than twice that of white, non-Hispanics.

Comments:

Sudden Infant Death Syndrome has been defined as the 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 the death scene, and a review of the clinical history. (National Institute of Child Health and Human Development, 1989)

SIDS is one of the leading causes of death in infants from one month to one year of age. Each year, SIDS claims the lives of 3,000-5,000 infants in the United States. The incidence is higher in the winter months, among males, low birthweight infants, and black babies. The peak incidence of SIDS occurs between two and four months of age, with 91 percent of the deaths occurring between one and six months of age. Despite ongoing research, these deaths remain unpredictable - the infants, in most cases, appearing to be healthy.

In Colorado, the incidence of SIDS has varied from a high of 2.64/1,000 live births in 1984 to the current incidence of 1.43 deaths/1,000 live births. Nationally, a decrease in SIDS deaths is being evaluated in a variety of research projects. On an international level, significant decreases in the numbers of SIDS deaths are also being reported and the change evaluated.

In 1992, the Academy of Pediatrics, following the lead of physicians in the United Kingdom, New Zealand, and Australia, recommended that healthy, full-term infants be placed for sleep on their side or back to reduce the risk of SIDS. In addition, a nationwide campaign to "Reduce the Risk of SIDS" was initiated by the U.S. Public Health Service, the American Academy of Pediatrics, the Association of SIDS Program Professionals, and the SIDS Alliance. This educational campaign recommends: (1) infants should sleep on a firm surface without fluffy blankets, quilts or sheepskins; (2) babies should be kept warm, but overheating, especially during illness, should be avoided; (3) mothers should breast-feed, if possible, and get appropriate prenatal and infant health care services; and (4) the infant should be kept in a smoke-free environment. It is important to note that risk factors in and of themselves do not cause SIDS, and the majority of people whose babies die of SIDS are low risk parents with low risk babies. Most babies with one or more risk factors will not become SIDS victims.

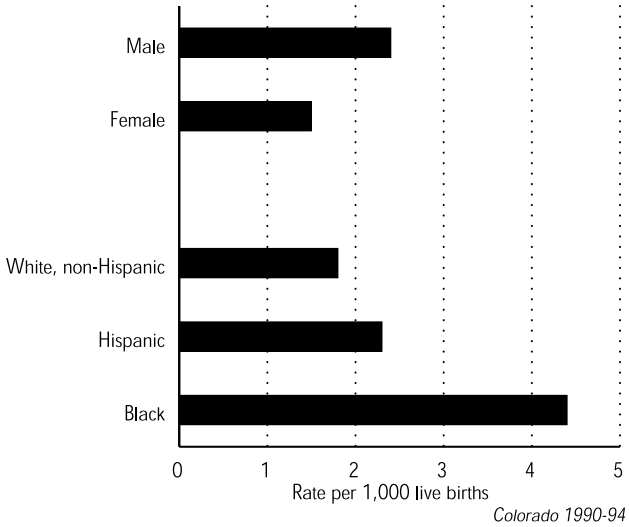
Sudden Infant Death Syndrome: Colorado 1990-94

n=533

Identification		1990	1991	1992	1993	1994	1990-94
	Child Fatality Review	115	129	102	115	72	533
	Colorado SIDS Program	117	136	109	119	76	557
	Death certificate (ICD9 798.0)	109	122	93	106	66	496
Gender							
Male	Number	69	82	65	73	44	333
	Percent	60.0	63.6	63.7	63.5	61.1	62.5
	Rate/1000 live births	2.5	3.0	2.4	2.7	1.6	2.4
Female	Number	46	47	37	42	28	200
	Percent	40.0	36.4	36.3	36.5	38.9	37.5
	Rate/1000 live births	1.8	1.8	1.4	1.6	1.1	1.5
Race/Ethnicity							
White, non-Hispanic	Number	86	83	67	74	41	351
	Percent	74.8	64.3	65.7	64.3	56.9	65.9
	Rate/1000 live births	2.2	2.1	1.7	1.9	1.1	1.8
Hispanic	Number	21	24	26	23	16	110
	Percent	18.3	18.6	25.5	20.0	22.2	20.6
	Rate/1000 live births	2.3	2.5	2.6	2.3	1.6	2.3
Black	Number	8	17	9	16	13	63
	Percent	7.0	13.2	8.8	13.9	18.1	11.8
	Rate/1000 live births	2.8	5.9	3.1	5.6	4.8	4.4

Sudden Infant Death Syndrome Rates*

n=533



Colorado 1990-94

** Deaths to resident and non-resident children per 1,000 Colorado live births*

Unintentional Injury

Public health professionals use the terms intentional and unintentional in an attempt to distinguish between injuries which have been inflicted and those which have traditionally been considered "accidental." Although accident is still used as a manner of death, the use of the term "accident" is being discouraged by injury prevention experts because it implies an event which has "just happened" and which is not preventable. The term unintentional is being used in this report, but it should be recognized that this issue is not clear-cut and that intent is not always known in these fatalities.

A 3-year-old girl drowned in an irrigation canal that was near her home. She was unsupervised while playing outside and had been told not to go near the water.

For this report, the age groups 1-4 years and 5-9 years were selected for particular attention because injury prevention strategies for younger children are often different than for the older age groups.

There were 146 unintentional injury deaths to children ages 1-4 between 1990 and 1994. Sixty-five percent of these deaths were to males. The male unintentional injury death rate was 17.7 per 100,000 male children ages 1-4, while the female rate was 9.9 per 100,000. Hispanic and black children in this age group were more likely to die of unintentional injury (19.7 and 24.4 per 100,000 respectively) than were white, non-Hispanic children (11.6). The most frequent cause of unintentional injury death in this age group was motor vehicle incidents in which the child was a pedestrian (29 deaths). An almost equal number of children (28) died in a motor vehicle crash. Drowning was the cause of death for 18.5 percent in this age group followed by suffocation and fires (8.9% each).

A 5-year-old boy died in a house fire. He had a history of playing with matches and was found in a bedroom closet although the fire started in the living room. Investigators determined that the child was responsible for starting the fire.

Between 1990 and 1994, 113 children ages 5-9 died of unintentional injuries. Males were overrepresented among these deaths at 63.7 percent of the total. The male unintentional injury death rate was 10.8 per 100,000 males ages 5-9 compared to 6.4 per 100,000 for females. The Hispanic rate was higher (12.0) than either white, non-Hispanic or black (8.3 and 7.6 respectively). Motor vehicle crashes caused 38.1 percent of these deaths, followed by drowning (13.3%) and motor vehicle pedestrian incidents (10.6%). Eight children were killed on bicycles and seven in fires.

Prevention:

Unintentional injuries are frequently preventable, and the Child Fatality Review Committee has classified almost all of the deaths that have resulted from unintentional injuries as preventable. Although the largest number are related to motor vehicles, most of the others fall into a few general categories.

Drowning deaths can be prevented by adult supervision of children whenever there is a body of water present, including bathtubs and buckets. It only takes a short time and a relatively small amount of water for a child to drown. In rural areas, drainage and irrigation ditches are hazards to children who live and play around them. Communities must work together to develop functional barriers to keep children away from these dangerous areas. Parents, other caregivers, and children should be reminded frequently about the dangers of these bodies of water, and vigilance by those responsible for small children is imperative.

Suffocation and choking deaths are not easily addressed by a single prevention strategy. Environmental considerations, close supervision of young children, and knowing what to do in an emergency are key in preventing these child deaths. When possible, removing dangerous items from a child's environment is the most effective method of prevention. Examples of this include cutting or replacing unsafe curtain cords, immediate disposal of plastic bags, and providing safe, age-appropriate toys for children. Increasing the awareness of parents and caregivers about the hazards of curtain cords and unsafe foods and toys, such as balloons, is also important. It's easy for small children to find small objects so, once again, adequate supervision is vital. Securing heavy objects to prevent children from being crushed is another safeguard that can be done in the home.

Colorado, with its towering mountains, swiftly moving streams, and beautiful forests, presents additional hazards for children. Parents, youth workers, and children must be properly educated about outdoor recreational safety, particularly as it relates to falls, drownings, and fires. It is important for children to know what to do if they become lost, to be taught safe hiking practices, and to be supplied with appropriate equipment, including emergency food, water, clothing, and a whistle. Youth workers must take special precautions to ensure the safety of the children in their care, and adequate adult supervision is necessary. Life jacket use, swimming lessons, and boater safety education are critical in preventing drowning deaths in Colorado's mountain streams, lakes, and reservoirs.

There are two factors which are particularly significant in the prevention of fire-related fatalities: the presence of a functioning smoke detector or fire alarm and restriction of access to fire-starting material by young children. The development and regular rehearsal of a "Family Escape Plan" in the event of a fire and the availability of fire extinguishing equipment in the home are also important. Parents and caregivers must understand the dangers in allowing children access to fire-starting materials as well as the proper training of children on their use. Colorado has a rich cultural and

ethnic mixture of children, as well as considerable distinctions between rural and urban environments. It is important for prevention programs in this state to be sensitive to cultural, ethnic, and geographical differences among the populations they target.

Unintentional Injury Child Fatalities: Colorado 1990-94

Age 1-4 years, n=146

Gender		1990	1991	1992	1993	1994	1990-94
Male	Number	21	13	19	26	16	95
	Percent	75.0	61.9	61.3	66.7	59.3	65.1
	Rate/100,000	20.0	12.3	17.8	23.8	14.4	17.7
Female	Number	7	8	12	13	11	51
	Percent	25.0	38.1	38.7	33.3	40.7	34.9
	Rate/100,000	7.0	7.9	11.7	12.4	10.3	9.9

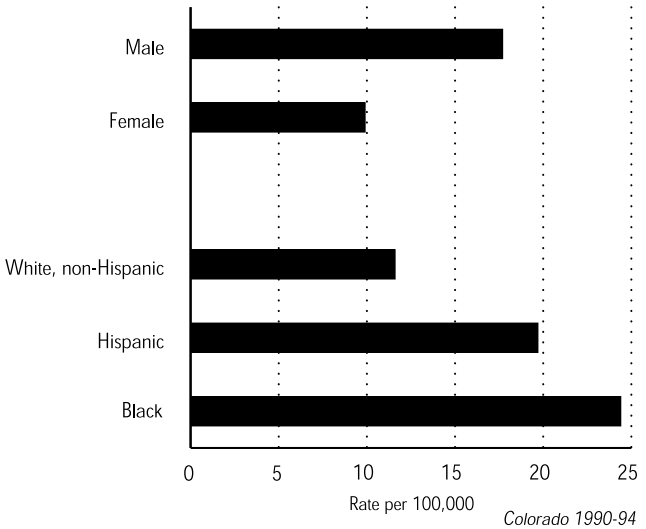
A 2-year-old boy died after being struck by his uncle's car while backing out of the driveway. Both parents thought that the other was watching the child while he played in the yard.

Race/Ethnicity	Number	Percent	Rate per 100,000
White, non-Hispanic	90	61.6	11.6
Hispanic	36	24.7	19.7
Black	14	9.6	24.4

Cause of death	Number	Percent
Motor vehicle — pedestrian	29	19.9
Motor vehicle	28	19.2
Drowning	27	18.5
Suffocation	13	8.9
Fire	13	8.9
Fall	6	4.1
Choking	5	3.4
Poisoning	3	2.1
Struck by falling object	3	2.1
Other	19	13.0

Unintentional Injury Child Fatality Rates*

Age 1-4 years, n=146

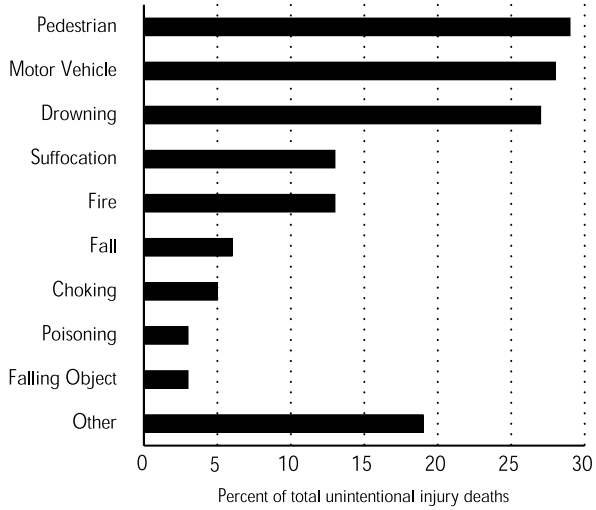


Colorado 1990-94

* Deaths to resident and non resident children ages 1-4 years per 100,000 Colorado population ages 1-4 years

Unintentional Child Fatalities by Cause

Age 1-4 years, n=146



Colorado 1990-94

Unintentional Injury Child Fatalities: Colorado 1990-94

Age 5-9 years, n=113

Gender		1990	1991	1992	1993	1994	1990-94
Male	Number	12	18	19	13	10	72
	Percent	66.7	69.2	63.3	68.4	50.0	63.7
	Rate/100,000	9.2	13.7	14.1	9.6	7.3	10.8
Female	Number	6	8	11	6	10	41
	Percent	33.3	30.8	36.7	31.6	50.0	36.3
	Rate/100,000	4.9	6.4	8.6	4.6	7.6	6.4

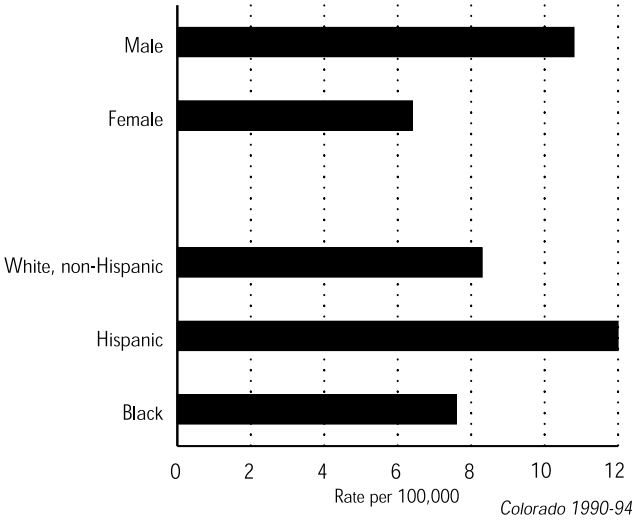
A 9-year-old girl died when she tried to cross a busy street on her bicycle and was struck by a car. She was not wearing a helmet.

Race/Ethnicity	Number	Percent	Rate per 100,000
White, non-Hispanic	81	71.7	8.3
Hispanic	26	23.0	12.0
Black	5	4.4	7.6

Cause of death	Number	Percent
Motor vehicle	43	38.1
Drowning	15	13.3
Motor vehicle - pedestrian	12	10.6
Motor vehicle - bicycle	8	7.1
Fire	7	6.2
Fall	3	2.7
Poisoning	3	2.7
Struck by falling object	3	2.7
Other	19	16.8

Unintentional Injury Child Fatality Rates*

Age 5-9 years, n=113

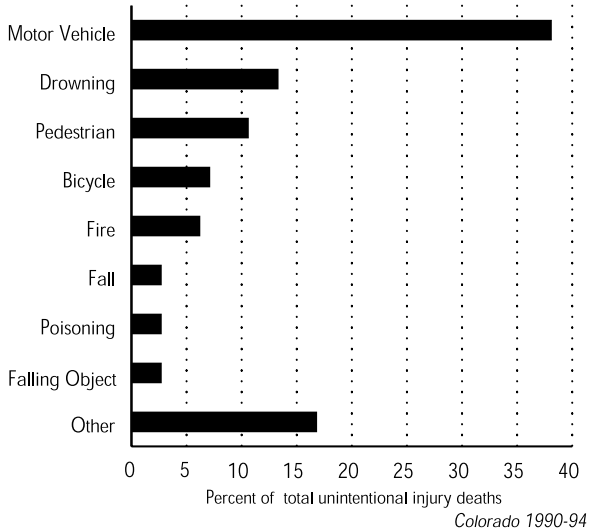


Colorado 1990-94

** Deaths to resident and non-resident children ages 5-9 years per 100,000 Colorado population ages 5-9 years*

Unintentional Child Fatalities by Cause

Age 5-9 years, n=113



Colorado 1990-94

Motor Vehicles

Motor vehicle deaths, including those involving pedestrians, accounted for 53 percent of the 592 unintentional injury deaths and nine percent of all deaths to children ages 0-16 during the five-year period. The motor vehicle death rate was 7.3 per 100,000 children in the age group. Of the motor vehicle-related deaths, 65.8 percent were male. The male death rate was 9.4 per 100,000, compared to 5.1 per 100,000 for females. Almost one in three motor vehicle-related fatalities was 15-16 years old, and their rate (22.5 per 100,000) was at least three times that of any other age group. Hispanic youth were at greater risk of motor vehicle death (11.4 per 100,000) than were white, non-Hispanics (6.6) or blacks (6.8). In at least 44.7 percent of these deaths, appropriate restraints were not used. Other risk factors identified were driver inexperience in at least 23.1 percent of cases and use of alcohol by a driver or a pedestrian in at least 22.3 percent.

A 1-year-old boy died after being ejected from a motor vehicle. His mother was driving, went through a stop sign, and was hit by another car. He was not in a car seat, although his mother said that she normally used one but had forgotten it that day.

A 16-year-old girl died when she tried to overcorrect after her car had drifted onto the shoulder of the highway. She had her driver's license for two months, and driver inexperience was felt to be the primary contributing factor.

Prevention:

Education of parents and enforcement of existing laws are key in preventing these fatalities. Parents need information on the proper use and installation of child passenger seats or seat belts, as appropriate to age and size, but they must also understand how critical the use of child seats and seat belts is in reducing child deaths related to motor vehicle crashes, and they must make a conscious decision that their children will grow up using these safety devices. Developments in the technology of passive restraint systems may also prove effective. Enforcement of the current seat belt laws by police and state patrol serves as a powerful incentive for parents to always buckle up their children. Ensuring that all children on bicycles and/or motorcycles wear properly fitting helmets will reduce both deaths and serious head injuries.

Pedestrian safety must be addressed from the perspectives of both the pedestrian and the driver. As soon as they begin walking, children should start receiving pedestrian safety messages, and they must be supervised whenever they are near streets or driveways. Drivers should be especially alert when children are in the vicinity. When moving a car from a parked position, whether on a street or in a driveway, spending those few extra seconds to make sure no children are near the vehicle can save a life.

Across the nation, support is growing for graduated licensing for drivers under the age of 18. Many young drivers do not have sufficient training or experience to manage the complex task of driving when they are first licensed at age 16. With a graduated licensing system, young drivers increase the amount of supervised driving time they receive behind the wheel and are given the opportunity to experience more difficult driving in less dangerous circumstances. There can also be restrictions on night driving or on the number and age of passengers. By demonstrating violation-free driving performance prior to full provision licensure, the young driver

Motor Vehicle Child Fatalities: Colorado 1990-94

Age 0-16 years, n=316

		1990	1991	1992	1993	1994	1990-94
Total							
	Number	52	60	65	72	67	316
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
	Rate/100,000	6.3	7.1	7.5	8.1	7.4	7.3
Gender							
Male	Number	30	44	41	50	43	208
	Percent	57.7	73.3	63.1	69.4	64.2	65.8
	Rate/100,000	7.1	10.2	9.3	11.0	9.3	9.4
Female	Number	22	16	24	22	24	108
	Percent	42.3	26.7	36.9	30.6	35.8	34.2
	Rate/100,000	5.5	3.9	5.7	5.1	5.5	5.1

Motor Vehicle Child Fatalities: Colorado 1990-94

Age 0-16 years, n=316

Age group		1990	1991	1992	1993	1994	1990-94
<1	Number	*	*	3	3	*	11
	Percent	*	*	4.6	4.2	*	3.5
	Rate/100,000	*	*	5.5	5.5	*	4.1
1-4	Number	12	9	10	17	13	61
	Percent	23.1	15.0	15.4	23.6	19.4	19.3
	Rate/100,000	5.8	4.4	4.8	7.9	6.0	5.8
5-9	Number	8	14	16	13	12	63
	Percent	15.4	23.3	24.6	18.1	17.9	19.9
	Rate/100,000	3.2	5.5	6.1	4.9	4.5	4.8
10-14	Number	12	14	16	17	19	78
	Percent	23.1	23.3	24.6	23.6	28.4	24.7
	Rate/100,000	5.3	5.9	6.5	6.7	7.3	6.4
15-16	Number	18	22	20	22	21	103
	Percent	34.6	36.7	30.8	30.6	31.3	32.6
	Rate/100,000	21.3	25.1	21.9	23.0	21.2	22.5
Race/Ethnicity							
White, non-Hispanic	Number	39	44	42	43	45	213
	Percent	75.0	73.3	64.6	59.7	67.2	67.4
	Rate/100,000	6.3	7.0	6.5	6.5	6.7	6.6
Hispanic	Number	12	14	20	21	16	83
	Percent	23.1	23.3	30.8	29.2	23.9	26.3
	Rate/100,000	8.7	9.9	13.8	14.1	10.5	11.4
Black	Number	*	*	3	5	4	15
	Percent	*	*	4.6	6.9	6.0	4.7
	Rate/100,000	*	*	6.8	10.9	8.5	6.8

*Indicates fewer than three events in the category

County of Injury

County	No.	County	No.	County	No.		No.
El Paso	33	Boulder	10	Gunnison	5	Conejos	3
Weld	26	Arapahoe	9	Las Animas	5	Douglas	3
Adams	24	Mesa	9	Montrose	5	La Plata	3
Denver	21	Eagle	8	Costilla	4	Lincoln	3
Jefferson	21	Garfield	8	Elbert	4	Sedgwick	3
Pueblo	17	Alamosa	6	Montezuma	4	Summit	3
Larimer	16	Moffat	6	Baca	3	Other**	54

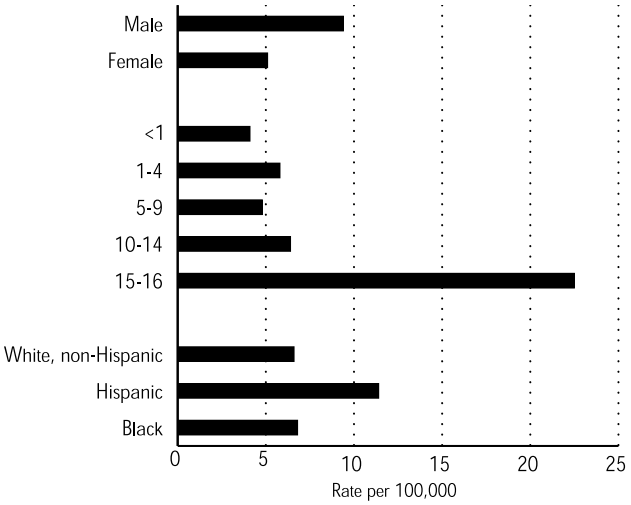
**Other includes out-of-state injuries, unknown location, and counties with fewer than three occurrences during the 5-year period

Decedent role, 1991-94*, n=264		1991	1992	1993	1994	1991-94
Driver	Number	10	8	13	10	41
	Percent	16.7	12.3	18.1	14.9	15.5
Passenger	Number	31	35	35	36	137
	Percent	51.7	53.8	48.6	53.7	51.9
Pedestrian	Number	13	14	18	15	60
	Percent	21.7	21.5	25.0	22.4	22.7
Bicyclist	Number	4	7	5	5	21
	Percent	6.7	10.8	6.9	7.5	8.0

*Data not available for 1990

Motor Vehicle Child Fatality Rates*

Age 0-16 years, n=316

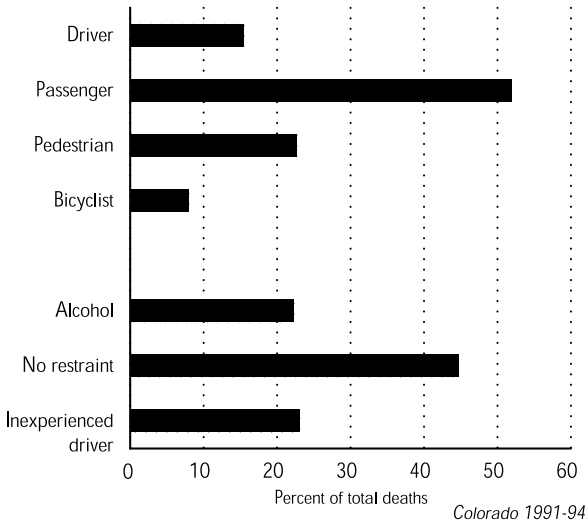


Colorado 1990-94

** Deaths to resident and non-resident children under 17 per* 100,000 *Colorado population under 17*

Motor Vehicle Child Fatality Roles & Factors

Age 0-16 years, n=264



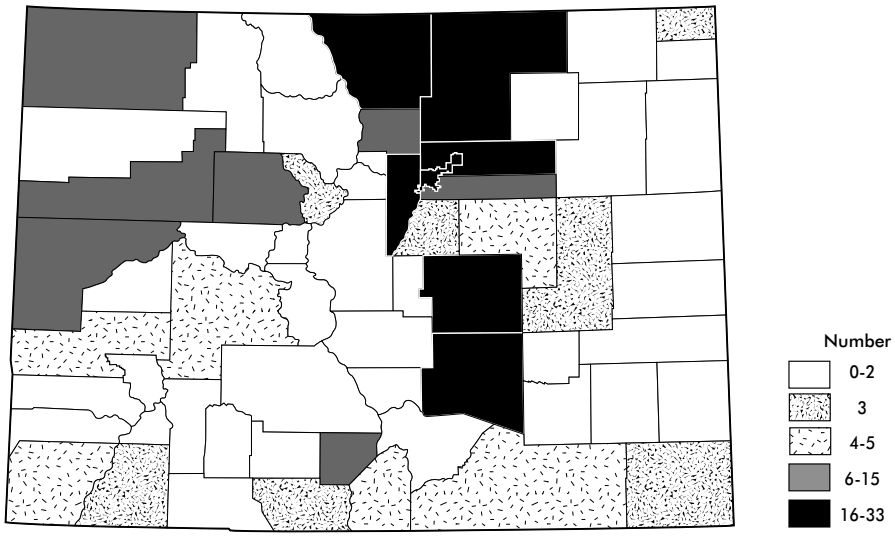
Colorado 1991-94

Associated factors, 1991-94*, n=264		1991	1992	1993	1994	1991-94
Alcohol use by a driver or pedestrian	Number	17	14	12	16	59
	Percent	28.3	21.5	16.7	23.9	22.3
Seat belt or child restraint not used	Number	29	27	31	31	118
	Percent	48.3	41.5	43.1	46.3	44.7
Inexperienced driver	Number	12	9	15	25	61
	Percent	20.0	13.8	20.8	37.3	23.1

*Data not available for 1990

Motor Vehicle Deaths by County of Injury

Colorado 1990-94



Suicide

During the period 1990-1994, 110 children ages 10-16 committed suicide in Colorado. The suicide rate was 6.5 per 100,000 children 10-16 years of age. The suicides were more likely to be committed by males (74.5%) than by females. The suicide rate was three times higher for ages 15-16 (13.1 per 100,000) than for ages 10-14 (4.1 per 100,000). Seventy-seven percent of these youth suicides were white, non-Hispanic compared to 16 percent Hispanic. The rates for these two race/ethnic groups were virtually identical, however, at 6.7 and 6.5 per 100,000. Firearms were the method of death for 59.1 percent of these youths followed by hanging/strangulation/suffocation at 30.0 percent. The proportion of cases in which an autopsy was performed has declined over the period ranging from a high of 75.0 percent in 1991 to 57.1 percent in 1994.

A 16-year-old boy hung himself in the family's garage after another student received an award at school that he had hoped to get. He was an excellent student, involved in many activities, and described as an overachiever.

A 15-year-old girl used her father's rifle to commit suicide. Her father did not believe that she knew how to use the weapon. She had talked openly to her classmates about suicide and death.

Prevention

The prevention of youth suicide is as complex as the reasons that our children attempt suicide in the first place. There are many theories about why suicides occur and a general belief by our society that suicide is not preventable and that if someone wants to commit suicide, there isn't anything anyone can do to stop them.

Many prevention programs provide education to parents, school personnel, peers, and youth workers on the indicators of potential suicide and high risk behavior. Risk factors for adolescent suicide include stressful life events, previous suicide attempts or suicidal ideation, and psychiatric disorders, as well as a family history of suicidal episodes, hopelessness, poor impulse control, alcoholism or other substance abuse, disturbed interpersonal relationships, and gender identity issues.

Early identification and intervention may prevent some adolescents from attempting and committing suicide. Suicide prevention efforts can include direct intervention at the time of the event, as well as addressing the broad spectrum of interrelated risk factors leading to the event. The Centers for Disease Control and Prevention publication "Youth Suicide Prevention Programs: A Resource Guide" suggests the eight different program activities or prevention strategies that are listed below:

- School Gatekeeper Training: Directed at school staff to help them identify students at risk of suicide and refer such students as appropriate. These programs also teach staff how to respond to cases of a tragic death or other crisis in the school.
- Community Gatekeeper Training: Directed at community members such as clergy, police, merchants and recreation staff, as well as physicians, nurses, and other clinicians who see adolescents. Appropriate identification and referral is emphasized.
- General Suicide Education: Directed at students to provide them with the facts about suicide, alert them to suicide warning signs, and provide information about how to seek help for themselves or others.
- Screening Programs: Involve the administration of an instrument to identify high-risk youth in order to provide more targeted assessment and treatment.
- Peer Support Programs: Designed to foster peer relationships, competency development, and social skills among youth at high risk of suicide or suicide behavior.
- Crisis Centers and Hotlines: Primarily provide telephone counseling for suicidal people.
- Means Restriction: Consists of activities designed to restrict access to handguns, drugs and other common means of suicide.
- Intervention After a Suicide: Designed to help prevent or contain suicide clusters and to help peers effectively cope with feelings of loss that come with the sudden death or suicide of a peer in post-intervention efforts.

Suicide Child Fatalities by County of Residence: Colorado 1990-94

Age 10-16 years, n=110

County of residence	Number	Rate/100,000	County of residence	Number	Rate/100,000
Jefferson	16	2.8	Boulder	4	1.5
Arapahoe	11	2.1	Weld	4	2.2
Larimer	11	4.7	Douglas	3	2.8
Adams	10	2.6	Fremont	3	8.4
Denver	10	1.9	Mesa	3	2.4
El Paso	9	1.6	Morgan	3	9.1
Pueblo	7	4.5	Other	16	

Suicide Child Fatalities: Colorado 1990-94

Age 10-16 years, n=110

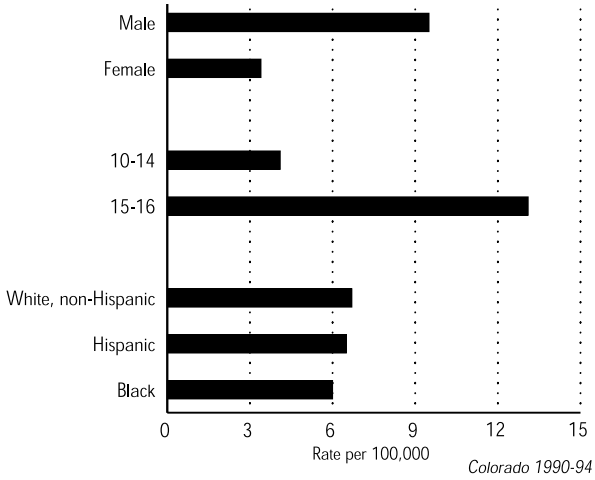
		1990	1991	1992	1993	1994	1990-94
Total							
	Number	20	20	30	19	21	110
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
	Rate/100,000	6.4	6.1	8.9	5.4	5.8	6.5
Gender							
Male	Number	16	16	18	15	17	82
	Percent	80.0	80.0	60.0	78.9	81.0	74.5
	Rate/100,000	10.0	9.5	10.4	8.3	9.2	9.5
Female	Number	4	4	12	4	4	28
	Percent	20.0	20.0	40.0	21.1	19.0	25.5
	Rate/100,000	2.6	2.5	7.3	2.4	2.3	3.4
Age group							
10-14	Number	8	8	14	10	10	50
	Percent	40.0	40.0	46.7	52.6	47.6	45.5
	Rate/100,000	3.5	3.4	5.7	3.9	3.8	4.1
15-16	Number	12	12	16	9	11	60
	Percent	60.0	60.0	53.3	47.4	52.4	54.5
	Rate/100,000	14.2	13.7	17.5	9.4	11.1	13.1
Race/Ethnicity							
White, non-Hispanic	Number	13	17	23	15	17	85
	Percent	65.0	85.0	76.7	78.9	81.0	77.3
	Rate/100,000	5.5	6.9	9.1	5.7	6.3	6.7
Hispanic	Number	4	*	7	*	3	18
	Percent	20.0	*	23.3	*	14.3	16.4
	Rate/100,000	7.7	*	12.6	*	5.0	6.5
Black	Number	3	*	*	*	*	5
	Percent	15.0	*	*	*	*	4.5
	Rate/100,000	19.6	*	*	*	*	6.0

Autopsy performed		**1990**	**1991**	**1992**	**1993**	**1994**	**Total**
Yes	Number	14	15	21	13	12	75
	Percent	70.0	75.0	70.0	68.4	57.1	68.2

*Indicates fewer than three events

Suicide Child Fatality Rates*

Age 10-16 years, n=110

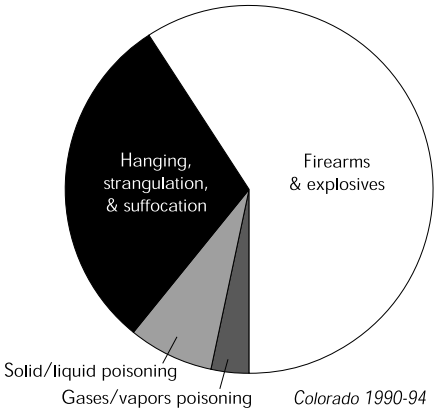


** Deaths to resident and non-resident children ages 10-16 years per 100,000 Colorado population ages 10-16 years*

Method	Number	Percent
Firearms and explosives	65	59.1
Hanging, strangulation, and suffocation	33	30.0
Poisoning by solid or liquid substances	8	7.3
Poisoning by other gases and vapors	4	3.6

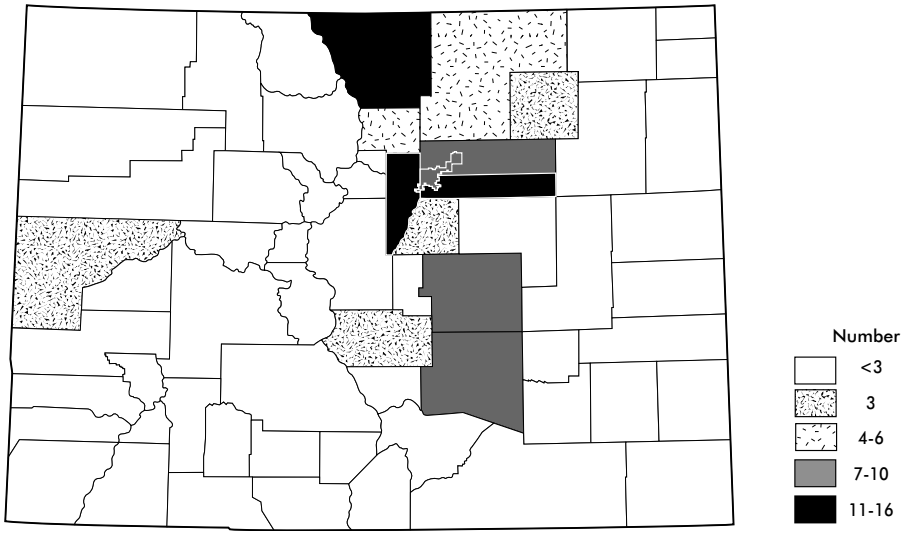
Suicide Child Fatalities by Method

Age 10-16 years, n=110



Suicide Child Fatalities by County of Residence

Colorado 1990-94



17-Year-Olds

The Child Fatality Review Committee added 17-year-olds to the review process in 1993. In order to control for changes in trends that would be due entirely to these youths, data on 17-year-olds is being presented separately. There were a total of 94 deaths in this age group during 1993 and 1994. Males accounted for 70.2 percent, a rate of 134.3 deaths per 100,000 17-year-old Colorado male residents. The female rate was less than half that of males at 61.5 per 100,000.

Hispanics represented 22.3 percent of the deaths compared to 72.3 percent for white, non-Hispanics. Only 18 percent of the deaths were signed out as natural manner while 48.9 percent were accidental, 20.2 percent suicide, and 10.6 percent homicide. The underlying cause of these deaths was heavily in the injury and poisoning area (81.9%) with 37.2 percent due to motor vehicle crashes.

Among these motor vehicle fatalities, the victim was equally likely to be driver or passenger (45.7% each). The seat belt was not in use in 65.7 percent of the crashes and inexperience on the part of the driver was determined in 54.3 percent.

Two 17-year-old boys died when the one who was driving lost control of the vehicle while traveling at a high speed on a gravel road. Neither boy was using his seat belt. Alcohol was involved.

A 17-year old boy drowned while swimming in a rapidly flowing Colorado river. He was not wearing a life jacket. Other drownings had previously occurred in the vicinity.

Prevention:

Over 80 percent of all deaths to children age 17 were injury-related, and almost half of the injury deaths were related to motor vehicles. As both drivers and passengers, teenagers are disproportionately involved in motor vehicle crashes. Motor vehicle crashes are in many ways easier to prevent than others forms of preventable deaths such as homicide and suicide. Many community-based programs and public education campaigns have successfully reduced motor vehicle fatalities by promoting the use of seat belts, teaching defensive driving and driver education, and establishing student-based programs such as Students Against Drunk Drivers (SADD) in schools to promote the prevention of drinking and driving.

Male adolescents take more risks than other age groups and engage in behaviors that may result in disabling injury or death. They are more likely to engage in recreational activities that entail some risk. Prevention programs are needed to target this age group and address these issues.

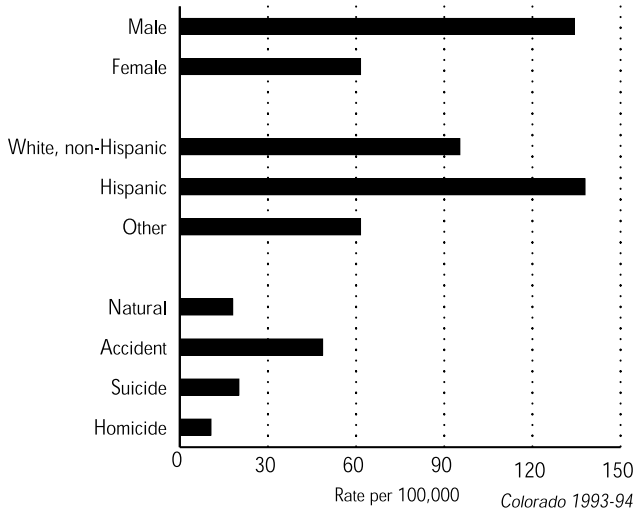
Child Fatalities: Colorado 1993-94

Age 17 years, n=94

	Number	Percent	Rate/100,000
Total	94	100.0	99.3
Gender			
Male	66	70.2	134.3
Female	28	29.8	61.5
Race/Ethnicity			
White, non-Hispanic	68	72.3	95.3
Hispanic	21	22.3	137.9
Other	5	5.3	61.5
Manner of death			
Natural	17	18.1	18.0
Accident	46	48.9	48.6
Suicide	19	20.2	20.1
Homicide	10	10.6	10.6
Preventability			
Preventable	76	80.9	80.3

Child Fatality Rates*

Age 17 years, n=94



*Deaths to resident and non-resident children age 17 years per 100,000 Colorado population age 17 years

Underlying cause of death (ICD9)	Number	Percent
Injury & poisonings (E800-E999)	77	81.9
Motor vehicle	[35]	[37.2]
Suicide	[18]	[19.1]
Other unintentional	[12]	[12.8]
Homicide	[10]	[10.6]
Circulatory system (390-459)	4	4.3
Neoplasms (140-239)	3	3.2
All other	10	10.6

Motor vehicle-related		Number	Percent
Total		35	100.0
Role	Driver	16	45.7
	Passenger	16	45.7
	Pedestrian	3	8.6
Related factors	Seat belt not used	23	65.7
	Inexperienced driver	19	54.3

Firearms

During 1990-1994, 137 deaths to children ages 0-16 were firearm-related. Of these, 47.4 percent were suicides, 38.0 percent homicides, and 12.4 percent accidents. Males were almost five times as likely to suffer a firearm-related death as females (5.1 and 1.1 per 100,000 respectively). Firearm deaths increase with age with ages 0-9 representing only 3.6 percent of these deaths, ages 10-14 with 37.2 percent, and ages 15-16 with 59.1 percent. Rates increased dramatically with age. Children ages 15-16 were more than four times as likely to have a firearm-related death (17.7 per 100,000) as were ages 10-14 (4.2 per 100,000). Firearm-related deaths also varied substantially by race/ethnicity with rates of 2.6 per 100,000 for white, non-Hispanics, 4.8 per 100,000 for Hispanics, and 7.7 per 100,000 for black

A 15-year-old boy died after a confrontation with a rival gang member. A verbal exchange took place and gang signs were flashed. The other boy left and returned with a handgun which he aimed and fired.

Firearm-related Child Fatalities: Colorado 1990-94

Age 0-16 years, n=137

		1990	1991	1992	1993	1994	1990-94
Firearm-related deaths							
	Number	24	19	31	33	30	137
	Rate/100,000	2.9	2.3	3.6	3.7	3.3	3.2
Manner of death							
Accident	Number	4	3	3	5	*	17
	Percent	16.7	15.8	9.7	15.2	*	12.4
	Rate/100,000	0.5	0.4	0.3	0.6	*	0.4
Suicide	Number	14	13	11	13	14	65
	Percent	58.3	68.4	35.5	39.4	46.7	47.4
	Rate/100,000	1.7	1.5	1.3	1.5	1.6	1.5
Homicide	Number	6	3	17	14	12	52
	Percent	25.0	15.8	54.8	42.4	40.0	38.0
	Rate/100,000	0.7	0.4	2.0	1.6	1.3	1.2
Gender							
Male	Number	23	14	23	29	24	113
	Percent	95.8	73.7	74.2	87.9	80.0	82.5
	Rate/100,000	5.5	3.2	5.2	6.4	5.2	5.1
Female	Number	*	5	8	4	6	24
	Percent	*	26.3	25.8	12.1	20.0	17.5
	Rate/100,000	*	1.2	1.9	0.9	1.4	1.1
Age group							
10-14	Number	11	7	12	13	8	51
	Percent	45.8	36.8	38.7	39.4	26.7	37.2
	Rate/100,000	4.8	2.9	4.9	5.1	3.1	4.2
15-16	Number	12	11	18	20	20	81
	Percent	50.0	57.9	58.1	60.6	66.7	59.1
	Rate/100,000	14.2	12.5	19.7	21.0	20.2	17.7
Race/Ethnicity							
White, non-Hispanic	Number	18	13	15	23	14	83
	Percent	75.0	68.4	48.4	69.7	46.7	60.6
	Rate/100,000	2.9	2.1	2.3	3.5	2.1	2.6
Hispanic	Number	3	4	12	5	11	35
	Percent	12.5	21.1	38.7	15.2	36.7	25.5
	Rate/100,000	2.2	2.8	8.3	3.4	7.2	4.8
Black	Number	3	*	4	4	4	17
	Percent	12.5	*	12.9	12.1	13.3	12.4
	Rate/100,000	7.2	*	9.0	8.8	8.5	7.7

*Indicates fewer than three events

youths. Data on type of firearm were collected between 1992 and 1994. Of the 94 firearm-related deaths in this period, 71 (75.5%) involved handguns and 23 (24.5%) involved rifles or shotguns.

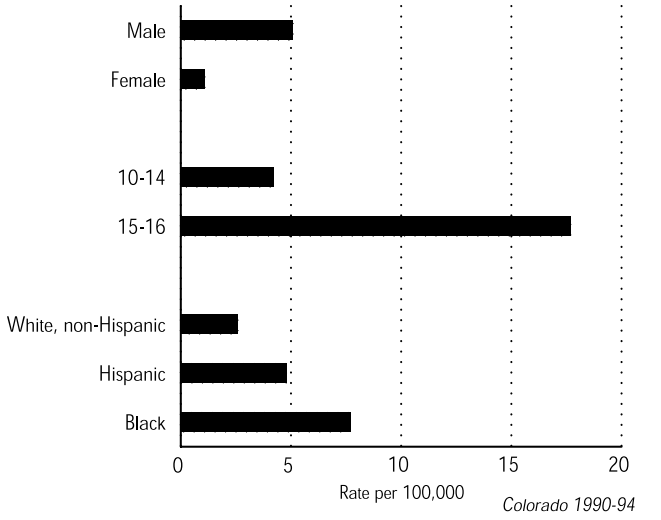
An 11-year-old boy took his father's handgun from the bedroom closet to show to some of his friends. The gun was unintentionally discharged and another boy was struck in the head by the bullet. According to his parents, the boy knew better than to handle the gun.

Prevention

Many children in Colorado have access to firearms, and a small number of them use the weapons either on themselves or others, either intentionally or unintentionally. Basic gun safety procedures that can make a difference in preventing these injuries include locking up firearms and storing ammunition separately, installing trigger locks, educating children about the risks involved in handling guns, and training for those children who hunt. Even the most rigorous safety strategies, however, may not prevent high risk adolescents from obtaining and using weapons. Parents, teachers, and others who come in contact with children should be aware of activities such as drug and/or alcohol use, gang involvement, or potential suicidal behavior that may indicate a higher risk. It makes sense to do anything possible to restrict firearm access in some situations, including removing them from the home rather than locking them up.

Firearm-related Child Fatality Rates*

Age 0-16 years, n=137

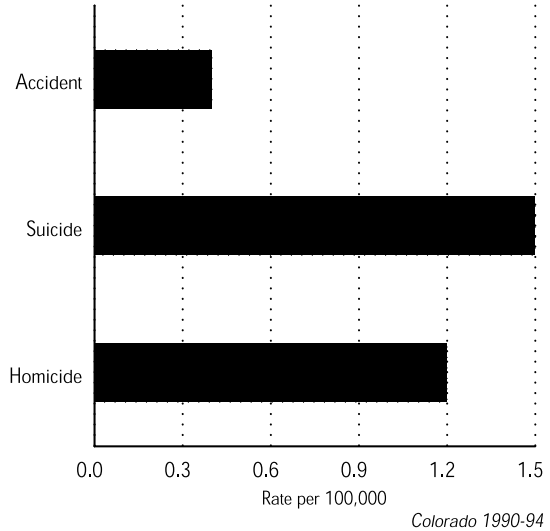


Colorado 1990-94

* Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17

Firearm-related Child Fatality Rates* by Manner

Age 0-16 years, n=137



Colorado 1990-94

*Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17

Maltreatment

Maltreatment deaths have been identified by the Child Fatality Review Committee as those in which abuse, primarily physical, or neglect, often supervisional, were directly related to the death. The committee determined that maltreatment was related to the deaths of 153 (4.2% of deaths to children 0-16) children during the five-year period. The maltreatment-related death rate was 3.5 per 100,000 children in this age group. Maltreatment was more likely to be related to the deaths of males (58.8%) than females (41.2%) - this being almost the same as the proportion of male child fatalities from all causes. The maltreatment death rate for males was also higher than that of females (4.1 per 100,000 compared to 3.0). The risk of maltreatment death decreases with age. Forty-three percent of these deaths occurred to infants and 37.3 percent to children ages 1-4. The rates are significantly different by age group. Among infants the maltreatment death rate was 24.5 per 100,000 and it dropped to 5.4 for ages 1-4. Relatively few deaths among children over four years were attributed to maltreatment. The maltreatment death rate among black children was six times higher (14.4 per 100,000) than among white, non-Hispanic children (2.3 per 100,000). The rate of Hispanic maltreatment deaths was slightly over twice that of white, non-Hispanics at 5.9 per 100,000. The mother most often was the perpetrator in these deaths (43.5%), followed by the father (25.8%) and the mother's boyfriend (17.7%). The majority (52.9%) of maltreatment deaths were signed out as homicides although a substantial proportion were signed out as either accidental (26.1%) or natural (9.8%).

A 1-year-old girl died after her stepfather became irritated by her crying and put a pile of clothes on top of her so she would stop. He had used this method of quieting the child in the past and meant to remove the clothing after she settled down.

A 10-month-old boy died after being left in the care of his father while his mother was at work. The father reported that the child had fallen off of the couch, but an autopsy determined that his injuries were consistent with Shaken Baby Syndrome.

An 18-month-old boy died after being left in the bathtub with his 3-year-old sibling. His mother had gone into another room to get some clothing for the children when the telephone rang. She estimated that she was gone from the bathroom for approximately five minutes.

Social services involvement with both the decedent and siblings is tracked to the extent possible. In some cases, knowing about prior involvement adds to the information the committee is able to gather about the circumstances of the death. In others, issues arise about communication among different agencies involved in the investigation. Questions frequently are asked about services provided for other children in a family in which a child has died because of abuse or neglect.

Most of the maltreatment deaths fall into the categories of physical abuse, supervisional neglect, or medical neglect. There are cases, however, that are not simple to classify. A case in which a child's mother's boyfriend physically abuses the child clearly falls into the abuse category, but should it be coded as neglect as well if the mother was aware of past abuse but failed to protect the child? Many motor vehicle-related deaths have associated factors which could fall into the category of neglect - failure to restrain the child properly or a parent driving while intoxicated. Is there a point at which this could be considered abusive? Over time, the committee has developed conventions by which these coding decisions are made. However, the maltreatment cases in this report have not been separated by abuse and neglect because of issues like these. Beginning with 1995 cases, the data forms include a new category for negligence related to motor vehicle incidents, and these cases will be reported separately from other abuse or neglect cases.

In addition to the deaths in which it was concluded that maltreatment was causally related to the death, there are a number of deaths each year in which there is evidence of maltreatment, but a causal relationship to the death was not conclusively established. For example, an adolescent who committed suicide may have experienced physical or sexual abuse or a child may be born with cocaine in his or her system because of drug use by a pregnant mother. The committee may not be able to establish a direct connection, but does want to acknowledge that maltreatment may play a part in additional fatalities.

Maltreatment Child Fatalities: Colorado 1990-94

Age 0-16 years, n=153

		1990	1991	1992	1993	1994	1990-94
Maltreatment deaths	Number	29	29	38	28	29	153
	Percent	3.9	3.9	5.2	3.8	4.4	4.2
	Rate/100,000	3.5	3.4	4.4	3.2	3.2	3.5
Manner of death							
Natural	Number	3	4	4	*	*	15
	Percent	10.3	13.8	10.5	*	*	9.8
	Rate/100,000	0.4	0.5	0.5	*	*	0.3
Accident	Number	8	3	10	7	12	40
	Percent	27.6	10.3	26.3	25.0	41.4	26.1
	Rate/100,000	1.0	0.4	1.2	0.8	1.3	0.9
Homicide	Number	11	19	20	16	15	81
	Percent	37.9	65.5	52.6	57.1	51.7	52.9
	Rate/100,000	1.3	2.3	2.3	1.8	1.7	1.9
Undetermined	Number	7	3	4	3	*	17
	Percent	24.1	10.3	10.5	10.7	*	11.1
	Rate/100,000	0.9	0.4	0.5	0.3	*	0.4
Gender							
Male	Number	20	15	23	14	18	90
	Percent	69.0	51.7	60.5	50.0	62.1	58.8
	Rate/100,000	4.7	3.5	5.2	3.1	3.9	4.1
Female	Number	9	14	15	14	11	63
	Percent	31.0	48.3	39.5	50.0	37.9	41.2
	Rate/100,000	2.2	3.4	3.6	3.2	2.5	3.0
Age group							
<1	Number	15	11	18	10	12	66
	Percent	51.7	37.9	47.4	35.7	41.4	43.1
	Rate/100,000	28.5	20.5	33.1	18.3	22.1	24.5
1-4	Number	9	11	9	14	14	57
	Percent	31.0	37.9	23.7	50.0	48.3	37.3
	Rate/100,000	4.4	5.3	4.3	6.5	6.4	5.4
5-9	Number	*	4	3	4	*	14
	Percent	*	13.8	7.9	14.3	*	9.2
	Rate/100,000	*	1.6	1.1	1.5	*	1.1
10-16	Number	3	3	8	*	*	16
	Percent	10.3	10.3	21.1	*	*	10.5
	Rate/100,000	1.0	0.9	2.4	*	*	0.9
Race/Ethnicity							
White, non-Hispanic	Number	15	14	16	14	14	73
	Percent	51.7	48.3	42.1	36.8	48.3	47.7
	Rate/100,000	2.4	2.2	2.5	2.1	2.1	2.3
Hispanic	Number	8	9	16	4	6	43
	Percent	27.6	31.0	42.1	14.3	20.7	28.1
	Rate/100,000	5.8	6.4	11.0	2.7	3.9	5.9
Black	Number	4	4	6	9	9	32
	Percent	13.8	13.8	15.8	32.1	31.0	20.9
	Rate/100,000	9.5	9.3	13.5	19.7	19.2	14.4

*Indicates fewer than three events

Social services contact	1990	1991	1992	1993	1994	1990-94
Decedent — prior contact	18	18	11	5	6	58
Siblings — prior contact	5	5	9	6	9	34
Siblings — contact time of death	10	1	8	10	7	36
Siblings — contact after death	0	0	4	2	3	9

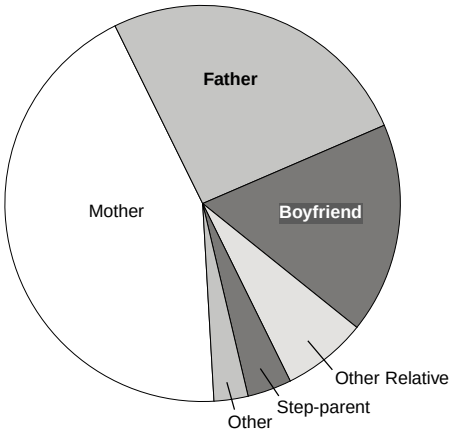
Maltreatment Perpetrator, 1991-94*, n=124

Perpetrator	Number	Percent
Mother	54	43.5
Father	32	25.8
Boyfriend	22	17.7
Other relative	8	6.5
Step-parent	5	4.0

*Perpetrator data not available for 1990

Perpetrators of Maltreatment Child Fatalities

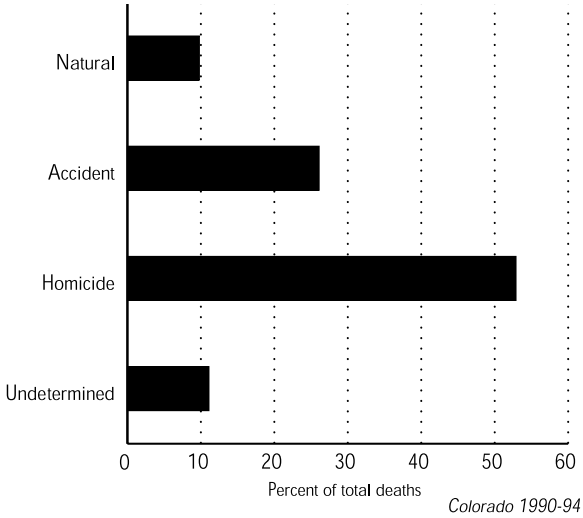
Age 0-16 years, n=124



*Colorado 1991-94**
**Perpetrator data not available for 1990*

Maltreatment Child Fatalities by Manner

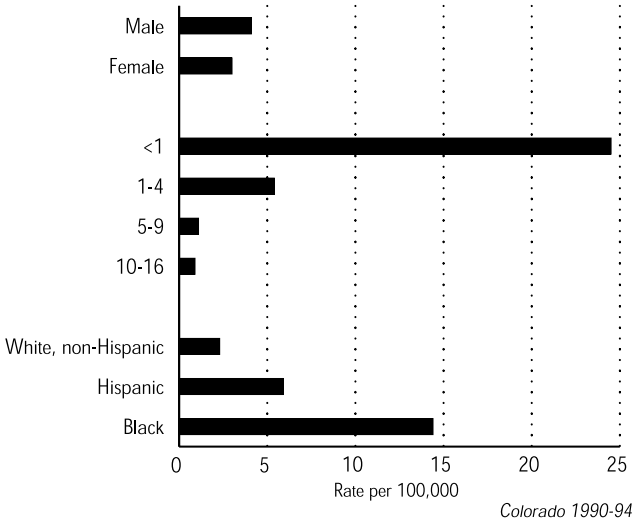
Age 0-16 years, n=153



Colorado 1990-94

Maltreatment Child Fatality Rates*

Age 0-16 years, n=153



Colorado 1990-94

** Deaths to resident and non-resident children under 17 per 100,000 Colorado population under 17*

A Social Services Perspective

Child Maltreatment Deaths: A Social Services Perspective

by Susan Ludwig,
Colorado Department of Human Services

One benefit of a process such as Child Fatality Review is that we gain a better understanding of the tasks and challenges that are still ahead of us. We identify policies and practices needing reexamination, within our own and other community agencies. The following is a list of these issues:

- Supervisional neglect continues to be a dangerous and lethal aspect of parenting found among families in our communities. There is sometimes an acceptance of an inadequate level of supervision that is defined more by the attitudes and culture of the community than the safety requirements of the children. Assessment by social services that examines the age and development of the child, the hazards present in the environment and the circumstances surrounding the incident is needed. Strong messages from the community must be communicated consistently to families, since documentation indicates that parents who chronically subject their children to supervisional neglect change their behavior only with much difficulty, and sometimes never.
- Improved communication among county social services departments is needed. Availability of this information can increase the capacity for social services to assess risk to children and to make services planning decisions based on a thorough understanding of the family's history and their demonstrated capacity to change. Too often county social services departments' records are not forwarded when requested by the new county of residence.
- Increased coordination between states in sharing child protection histories is needed. Some families have a lengthy history of involvement in social services in other states and yet often the history is unsought or undiscoverable when the family comes to our attention in Colorado. Discussions on a national level are encouraged to remove barriers to effective transfer of information.
- Local child fatality review teams are needed to strengthen the prevention and intervention efforts in each community across the state. Bringing fatality review to the local level allows individuals closely involved with fatalities to communicate with each other. Local review is an opportunity to examine local trends and respond proactively, to devise investigation protocols, develop agreements to improve reporting procedures, and to enhance a coordinated response to child deaths by connecting all involved agencies.
- Transfer of cases between caseworkers within an agency can be a barrier to the family's progress. Therefore, policies that lead to reduced transfers should be considered. Outcomes studies indicate that a positive relationship between the service provider and the family is the most often identified factor credited for promoting change. Disruption in this relationship can interrupt progress. The time of transfer, like any time of transition, increases the risk of trauma to the child, and agency resources are needed to provide increased monitoring during these periods.
- At the time of case closure or transfer to a less intensive level of services, it is critical that a comprehensive risk assessment is completed to determine whether the safety of the children has risen to an adequate level. Otherwise, the consequence of withdrawing or reducing services may be further maltreatment, including fatal abuse or neglect. Child Fatality Review identified several cases in which the risk re-assessment was not adequately completed. In one case, transfer resulted in less monitoring and increased access by the perpetrator, which preceded the child's homicidal death. This re-assessment must examine impending changes in the family, such as the birth of another child, the departure of a caretaking adult or the introduction of an unrelated adult into the household. These changes increase risk to children and have been noted as occurring prior to fatal child abuse.
- Assessment of safety in any abusive or neglectful family struggling with child abuse and neglect behaviors must be ongoing and done by all services providers. Some Family Preservation Services providers are seeking to improve their focus on child protection issues, after receiving feedback from the Colorado Department of Human Services Child Fatality Team.
- Following the death of a child, support of the caseworker and other line staff is crucial. This is a time of trauma for staff members, whose impulse to appear strong and decisive may coexist with overwhelming feelings of grief and vulnerability. Reactions include a diminished sense of competency, an unexpected, seemingly irrational sense of anger and helplessness, and other delayed stress reactions such as unabated guilt, physical illness, and withdrawal. We need to explore avenues for funding debriefing consultation.

Accountability in Child Protective Services

When a Child Dies — Accountability in Child Protective Services

by Jane Beveridge,
Colorado Department of Human Services

There are few more wrenching moments in child welfare than the death of a child, and even more so when the child has been previously known to child protective services. Supervisors and workers dread the thought of opening the paper and finding that a child who has been receiving services from the agency has died due to maltreatment.

While most of the public acknowledges that the child protection system cannot be 100% successful, they nonetheless want perfect results. On the other hand, all too often a child's death does not result in the agency examining its responses, let alone communicating effectively with the public or other agencies. The child welfare agency seems to close in on itself and to erect barriers to keep the questions at bay.

In May 1996, the American Public Welfare Association published a research study with results indicating that human services professionals should consider the following steps in responding to the public's reaction to child maltreatment deaths.

- Be accountable. Accept that the public trusts that government will keep children safe, and when a death happens there is a general feeling that something has failed in the system. Do not cover-up and do not offer excuses. This is not the time to blame other systems nor is it a time to talk about staff shortages.
- Speak from the top. The seriousness of the event demands authority within the agency - not unnamed spokespersons.
- Acknowledge the pain. The agency needs to acknowledge the same emotions that the public feels when a child dies - grief, remorse, condolences.
- Set the record straight. Give what facts are able to be shared in terms of the agency's response. It is possible to communicate necessary information without violating confidentiality. How does the agency usually respond to failure to thrive cases? Were these procedures followed in this case?
- Outline what actions your agency intends to take to follow-up on the case. Commit to review the case history, agency actions, and the circumstances leading up to the child's death. Invite other involved agencies, such as your Child Protection Team, to participate in this review so that there is a sense that the agency is willing to shed light on the situation.
- Follow-up on the actions you committed to. Provide information as to what changes you are prepared to make in order to make it harder for this situation to happen again. These changes could include staff training, increased supervision, changes in procedures, response protocols, or addressing staff performance issues.
- Energize the community. A longer term communication strategy includes stressing the need for community involvement in order to adequately protect children. Provide avenues for the community to become more actively involved with providing for child safety and family support. Also provide information about the successes of the agency. It is important that the communication with the public and the media not be limited to tragic events. The public needs to know what the agency is doing well - this can also be an opportunity to better educate the public as to what constitutes child protective services and the challenges facing the field.

At the time of a child's death, the hardest question to answer is "Why wasn't something done before?" The participants in these focus groups clearly identified that the best answer is to accept responsibility, show remorse, admit to failure, and commit to changes that will help to prevent this situation from being repeated.

Summarized from the publication "Reactions to Child Abuse and Neglect" by APWA, May 1996.

Prevention and Responsibility

by Deborah Haack,
Colorado Department of
Public Health & Environment

Many people mistakenly believe that injuries are chance events or "accidents" that cannot be prevented or predicted. In fact, research and data have identified patterns of risk and injuries to various groups, particularly children. With the information available to the Colorado Child Fatality Review Committee, we have been able to gather detailed information about circumstances surrounding injury deaths - information that can save children's lives and prevent injury-related hospitalizations through the development and implementation of injury prevention programs. Such programs target the risk of injury. They promote safety devices such as bicycle helmets, smoke detectors, seat belts and child safety seats. These methods are effective and known to prevent child deaths and injuries.

Physicians, public health professionals, social service workers, and child care providers are needed to spearhead injury prevention education on a one-to-one basis, as well as educating communities regarding childhood injury prevention related to motor vehicle crashes, pedestrian and bicycle injuries, falls, drownings, burns and firearms. Issues must be raised relevant to supervisional neglect and to the standards of care which are prudent in the area of adult supervision. Universal home visitation with an emphasis on parent education and childhood injury prevention can have a major impact in preventing child deaths.

Often, a child's death is a symptom of a much broader, much deeper social problem. Factors that are frequently a part of a preventable death include: poverty, homelessness, ignorance, mental health problems, developmental delay, substance abuse, joblessness, exposure to domestic violence, previous sexual abuse, and involvement with the criminal justice system.

In order to effectively address prevention of child deaths, we must also consider supporting and funding programs that support families, children and communities. This would include:

- the support of home visitation programs and early education programs such as Head Start;
- supporting families in need by providing health care, child care, training programs, safe housing, living wage employment and parent education;
- adequately funding mental health, suicide prevention, substance abuse, domestic violence shelters, and rape crisis programs;
- providing family supports for developmentally delayed parents and/or children, including respite care and homemaker services;
- working with the criminal justice system to ensure that perpetrators of violence receive meaningful prison sentences that send a message to society that family violence, child abuse, sexual assault and other forms of violence will not be tolerated.

A Coroner's Perspective

Colorado Child Fatality Review Committee: A Coroner's Perspective

by Dr. Thomas Henry, Denver County Coroner

Attempts to analyze and possibly prevent the deaths of children must begin with the study of prior deaths. In many cases this analysis relies in large part on the coroner who, by Colorado law, has the obligation to investigate and to certify the cause and manner of death. Children's deaths reportable to the coroner are usually those which are sudden and unexpected or are related to injury.

Coroners in Colorado have the same problem as death certifiers throughout the United States. Even when the cause of death is obvious, the way in which the cause is worded on the death certificate varies considerably. The certification of the manner of death (natural, accident, suicide, homicide, undetermined) can be even more nebulous. Recent presentations at the National Association of Medical Examiners meeting show marked disagreement in certifying the manner of death in select cases even among full time forensic pathologists. One benefit of a statewide Child Fatality Review Committee is that since every death is reviewed by one group, it allows a more consistent classification. When the committee does disagree with the manner of death, the coroner is notified that, for the committee's data purposes only, the manner has been changed. This does not change the death certificate, although the coroner can make the decision to amend it. The state committee, however, frequently lacks all of the information available to the local coroner. It is imperative therefore that there is reciprocal communication between the state committee and the local authorities for proper analysis of each death.

The extent of the coroner's investigation is sometimes a concern. There are sixty-three counties in Colorado, and each must operate within a budget. Some counties may have a full time salaried pathologist to perform as many autopsies as are required, while other counties pay for autopsies on a per-case basis. The budget for a rural county may dictate that the coroner be very selective about the expenditures for any autopsy, especially those involving extensive toxicologic analysis, radiologic examinations, etc. When an investigation requires a consultant, such as an engineer, toxicologist, anthropologist, or odontologist, costs can quickly rise. The economic issues will continue to be a concern for all counties. Ultimately, the adequacy of the investigation depends on the dedication and perseverance of the coroner and the support received from the community.

A Law Enforcement Perspective

Colorado Child Fatality Review Committee: A Law Enforcement Perspective

by Sergeant Holly Nicholson-Kluth, Douglas County Sheriff's Department

My involvement with the Child Fatality Review Committee has made me aware of two areas in which Law Enforcement should concentrate their efforts in order to maximize their crime prevention ability as it relates to crimes against children. First, law enforcement agencies should emphasize documentation and tracking of suspects involved with crimes against children. Information gathering and sharing are paramount when dealing with these types of cases due to the transitory nature of suspects and lack of reporting by and susceptibility of victims. This means that as law enforcement officers we should make every effort to think to the future and survey the means we have available to document, record and index child crimes in a way that maximizes the use of the information by our colleagues in the future. Recent changes in laws regarding sex offenders have introduced this philosophy at a statewide level. A nationwide registry that includes information about physical abuse, as well as sexual abuse against children, needs to be implemented. Until then, officers should concentrate on the means that are already available when deciding to summons, book and release, arrest or file on suspects accused of crimes against children, in order to facilitate the maximum use of their information by others in the future.

Secondly, law enforcement officers who investigate crimes against children should strive to be involved with multi-disciplinary teams and training, which will enhance their knowledge of resources, expand their philosophies, and facilitate their relationships with individuals in other agencies. A multidisciplinary approach to crimes against children investigations should become the only acceptable approach for all agencies in the community of child welfare in our State. Child Fatality Review Teams inherently promote inter-agency relationships and cooperation and should be established at a local level throughout the State.

A Prosecutor's Perspective

Colorado Child Fatality Review Committee: A Prosecutor's Perspective

By Jill-Ellyn Straus, Adams County District Attorney's Office

Being a member of the Colorado Child Fatality Review Committee has been a unique and enriching learning experience for me, personally and professionally. By having an opportunity to share ideas with other professionals who work on behalf of children and get perspectives from a variety of disciplines I have learned valuable ways to analyze a case that I am responsible for prosecuting. I now ask questions I would not have thought of and I am aware of resources and experts that I would not have been without my experience as a member of the committee.

The interdisciplinary approach is vital to the successful investigation, prosecution, and ultimately prevention of child abuse and neglect. This approach capitalizes on each area of expertise. It avoids duplication of effort while, at the same time, avoids costly errors of omission. Joint interviews ease the trauma for victims and witnesses. A school representative on the team may have important information the law enforcement members might not otherwise have access to or even think of. A public health nurse may have historical information that fills in investigative holes.

Our retrospective process has been very helpful for thinking in terms of prevention. However, I think local teams operating in a fashion that is contemporaneous with the event would be extremely productive for investigation and prosecution. The local prevention piece could then naturally fall into place. The creation of local teams will also foster the kind of cooperation and trust that our team has developed on a state level. Local teams would also reflect the unique character or idiosyncrasies of the areas they represent. A local sheriff, public health nurse, or caseworker may gain strength in operating as a team rather than being seen as a lone wolf. In larger areas the team approach will facilitate introductions that might otherwise never occur.

Successful prosecution does not always mean getting the longest prison sentence possible. It sometimes turns on a battle of the experts as to cause of death. A history of mental illness, prior abuse to siblings, or domestic violence may play a part. All of these are issues and information that can be addressed by a child fatality review committee.

A State Public Health Perspective

Colorado Child Fatality Review Committee: A State-level Public Health Perspective

By Courtney Thomas, Colorado Department of Public Health & Environment

Participation on the CFR has allowed us to better focus on the causes of childhood mortality and to make changes in our programs which would hopefully result in a reduction of those causes. Specifically, we have made efforts to better inform public health nurses about the types of preventable injuries that result in child death and encourage local nurses to implement individual client and community efforts to reduce those types of injuries. We have also been able to address the issue of children with special needs and equipment as this is clearly a group at increased risk for injury and death from intentional as well as unintentional injury. We have also become more aware of the scope and nature of unintentional injury to children in the state and have provided ongoing support to local nurses who serve on Child Protection teams and who may be "catalysts" in their counties and regions for the formation of their own Child Fatality Review Committees.

Bringing local public health nurses into "the loop" by querying them as to their awareness of CFR cases in their communities and reviewing their responses has helped us provide more effective consultation around specific situations to individual nurses and agencies.

Finally, participation in the CFR has allowed for those of us at the State level Maternal and Child Health staff to better meet our own Federal Year 2000 objectives for building better systems of care for all children.

A Local Public Health Perspective

Colorado Child Fatality Review Committee: A Local Public Health Perspective

By Lynn Trefren, Tri-County Health Department

I have been participating in the Child Fatality Review, including the medical review team, for approximately two years. My background is in outpatient pediatrics, and I have worked in Tri-County's pediatric clinics for the past four years.

I believe the value of the child fatality review process lies in its focus on prevention. In pediatrics, injury prevention is always a major focus. The review process allows us to look at individual deaths rather than statistics and examine specific situations for ways that prevention efforts might have made a difference.

Discussions about preventability within this team are different than others I have participated in because of the many disciplines involved. I have been able to offer a clear perspective on how prevention teaching fits into a well child visit. Other team members are able to explain procedures including social services interventions, police contacts with families, or SIDS follow-up visits.

In looking at how children die and how those deaths can be prevented, accidental injury will always be a major focus. When looking at individual deaths, it is sometimes hard to find a prevention strategy that would have worked. The more varied the input, the better the chance that a new or better intervention will be developed.

The biggest issue we face in our clinics is prioritizing the information we give to families. We know that they cannot take in all the information we have to offer. Looking at major causes of preventable deaths can give us some guidance in choosing the teaching that might offer the most protection to that child. Another major challenge within our system is the lack of resources our families deal with. No parent can give total focus to potential injuries when lack of food or shelter is a real, daily issue for them.

The process of reviewing deaths in children is a vital part of our knowledge base and our ability to develop prevention strategies that work.

Law Enforcement Guidelines

Law Enforcement Guidelines for Child Death Investigations

Introduction

In recent years, professionals from various state and local agencies responsible for child death investigations have participated on a Child Fatality Review Committee. This Committee reviews all children's deaths, and in the process there has been an increased awareness of the imperative need for coordination and cooperation between agencies.

Child death investigations can involve a wide range of professionals, including the coroner, medical personnel, the Department of Social Services, the District Attorney, child abuse experts and any other agencies or individuals who may have relevant information concerning the investigation.

Due to the great variances in resources and programs across the state, it is important that local agencies arrive at agreements regarding the procedures they will follow for investigation and what roles each agency will take in child death investigations. These guidelines were produced by the Child Fatality Review Committee in order to provide a supportive tool in that process.

The guidelines were developed for use in those cases in which there is a death of questionable cause, where the cause of death is unknown, unexplained, suspicious of abuse/neglect, or indeterminable until a full investigation is conducted.

One of the most critical steps in a child death investigation is the timely notification of all appropriate agencies and continued coordination amongst those agencies. Much of the responsibility for coordinating the investigation lies with the law enforcement agency and the primary investigator, but the investigation is collaborative, and, without cooperation, improper decisions may be made concerning a child's death.

The primary role of law enforcement is to document the scene, find and interview witnesses, and coordinate the handling of the investigation. The investigation of the death of a child is similar to other death investigations. However, numerous other individuals may become involved as the investigation progresses. The information and evidence gathered may be vital at later stages of the investigation. It is important to remember that it may be found that no crime occurred. Sometimes deaths appear to be accidental or non-accidental and later medical examination establishes a natural cause of death.

While some infants die of Sudden Infant Death Syndrome (SIDS), this cause of death is established by ruling out all other possible causes of death. Thus, SIDS is established as the cause of death only after all other possible causes of death have been ruled out. Because there is no medical way of ruling out some causes of death (suffocation, for example), investigators need to gather the most critical information surrounding the death which might not be available at a later time, while the medical examiners seek out possible medical reasons for the death. With that information and the autopsy findings, it will become clearer what other investigation, if any, needs to occur.

It is important not to conclude a cause of death until all steps are taken. When a SIDS death is suspected, a referral may be made at any time during the investigation process to the Colorado SIDS Program for the purposes of support to the parents, surviving siblings and child care providers.

INVESTIGATION STEPS

1. Initial Response

Officers who initially respond to the scene of a death of a child, or an emergency involving a child that might result in death, need to:

A. Note:
1) Arrival time;
2) Weather conditions;
3) Activities occurring at the scene; and
4) Individuals present.

B. Act:
1) Check for life signs and provide for medical treatment if appropriate.
2) Provide for protection of the scene.
3) If child is deceased, notify appropriate agencies, i.e., Department of Social Services (records check and possible action depending on case circumstances and other siblings in the home), the District Attorney's Office and the Coroner's Office.
4) Seek out possible witnesses, interviewing them separately from one another.
5) If other children are present, contact a victim advocate or crisis counselor, if one is available.
6) Complete a written report as soon as possible, describing the scene and the actions, statements and demeanor of individuals present. Note behavior of persons present. Note reactions of parents and children. Do not jump to conclusions about consistency or inconsistency of events or reactions. It is imperative that the investigator produces a documented, detailed description of the initial circumstances as described by the care-giver. The description that the care-giver provides as to how injuries occurred is important, because medical examination may prove that the descriptions provided are inconsistent with the nature and extent of the injuries. It is also imperative to document any times and dates given by the care-giver, as to when problems were first observed, because a delay in seeking medical assistance is a critical factor and may be an indicator of abuse or neglect.

2. Conducting the Investigation

Investigators need to:

A. Check their records and the records of social services for any previous contacts with the family or history of abuse.

B. Evaluate the need for a search warrant prior to taking any investigative steps. The coroner and others should not be allowed to enter the scene prior to determination of the need for a warrant. This does not preclude the provision of emergency assistance.

C. Wait for the arrival of the coroner prior to moving any items or the body. This does not preclude the collection of trace evidence that will be lost if not immediately collected.

D. Establish the room temperature and body temperature.

E. Visually observe the scene.

F. Have the scene photographed and/or videotaped.

G. Sketch the scene.

H. The examination of the body should include:
1) Photographs;
2) Examination of the clothing on the body; and
3) Examination of the body, noting consistencies or inconsistencies between the position of the body and rigor or lividity, bruises or other marks.

I. When removing the body from the scene, include clothing, bed covering, soiled diapers or clothing, rugs, toys, plastics, medication, etc., when such items are relevant to the investigation. The coroner takes custody of the body, but items collected should be made available to the coroner at the time of autopsy.

J. The investigator needs to evaluate whether the search should be expanded for evidence to include all rooms in the dwelling, the garage or other out buildings, trash containers, etc.

K. Include interviews of all relevant individuals such as:
1) Family/babysitter(s);
2) Friends;
3) Neighbors;
4) Social service workers or other similar agencies;
5) Family doctors;
6) School representatives, visiting nurses, preschool employees, etc.;
7) Paramedics, other officers, fire officers, and others;
8) The individual who found the child;
9) If the child was brought to the hospital, interview all hospital personnel who had contact with the family or persons who brought child to the hospital, including emergency room personnel, admitting nurses and hospital social workers; and
10) Other siblings and/or other children in the house.

L. If infant death, the following areas need to be assessed and documented:
1) Describe the bed/crib/bassinet, couch/floor, water mattress or other sleeping structure, including all sheets, pillows, plastic covers, blankets, objects in bedding.
2) Describe body position of infant when discovered - on stomach, on back, pinned vertically or horizontally, left or right side.
3) Indicate the position of face (nose- mouth) when discovered - was either nostril obstructed or blocked? Which one? Were those objects covering mouth, nose, near face?
4) Was infant sleeping alone? If not, was there a possibility of overlying?
5) If infant found face down, was there a visible cup/pocket in bedding?
6) Determine if any material was found in nose or mouth - vomit, saliva, mucus, secretions.
7) Indicate if secretions were noted on pillow, blanket, sheet or clothing.

M. Officers will need to obtain answers to the following questions. Most of the evidence/information listed will be obtained from others (medical personnel, coroner, etc.). Investigators should remember that marks on the body may not be what they appear to be and wait for a decision by the medical examiners concerning the possible cause(s).
1) Note size, shape, color and location of the following: sores, scars, diaper rash, other rashes, bite marks, bruises, cuts, abrasions.
2) Is there evidence of pattern injuries, i.e., belt buckles, etc.?
3) Is child clean?
4) Note repair and cleanliness of clothing. Does clothing fit child?
5) Are classic lesions of battering (different color bruises, bite and burn marks, fractures in different stages of healing) present?
6) Are there areas of denuded skin? What locations?
7) Does child appear normal size and weight for age?
8) Do rigor and liver patterns match position when and where body was found, and does body temperature agree generally with parental statement as to time of death?
9) Are parental explanations of incident inconsistent?
10) Was there a delay in seeking medical attention?
11) Do injuries match story told by parents? How do they differ?
12) Evidence of repeated visits to different doctors and emergency facilities, and these facts are not VOLUNTEERED by parents?

N. Other information which may need to be obtained and may be relevant includes:
1) Primary care-givers relationship to decedent.
2) History of family: abuse, alcohol abuse, drug abuse.
3) Does parent(s) work? If so, where?
4) When the child last ate, what did he/she eat? Is the child on formula? If so, what kind? How much food was eaten? Was food intake normal?
5) When was the child last seen alive?
6) What was the condition of the child at that time?
7) Who found the child?
8) What time was the child discovered? What position was child in? Was child moved? Was CPR done?
9) Time lapse from discovery to calling 911? What were they doing during this time? Who called for paramedics/police? Anyone else present at this time?
10) Where was the care-giver (babysitter, parent, etc.) when this was happening? Did he/she check on the child at any time during this time frame?
11) Any recent "falls," trauma, history of abuse, etc.?

12) Any recent complaints of feeling badly - appetite change, fussy, fever, irritability, cough, diarrhea, congestion?
13) Was child taken for treatment for above symptoms? If so, where was he/she treated?
    a) Where?
    b) When?
    c) Name of physician?
    d) What was diagnosis?
    e) What was done?
14) Any history of SIDS or other infant/children deaths of either parent? If yes, describe details, dates, location.
15) When was the decedent born? Are there siblings?
    a) Where was he/she born?
    b) Premature? How far along in gestation?
    c) Any problem at birth? What was done?
    d) Names of physicians for all family members.
    e) Shots been given? What and when?
    f) Respiratory problems, colds, etc? If so, what was given to the decedent? Prescribed? If so, by whom?
    g) Any known allergies or food intolerance?
16) Normal characteristics of child: active, quiet - any changes, etc?
17) Was the child toilet trained or in the process of being toilet trained?
18) Any previous abuse or domestic violence known?
19) Any chemicals or medications missing or ingested? If so, what, where, when, etc. - TAKE CONTAINER!
20) If the child was being cared for by a babysitter or a child care facility, the investigation should include a review of the licensee as to whether there have been any prior abuse or neglect incidences in the facility or deaths and other relevant information.
21) All medical records pertaining to the child.

O. Autopsy

An autopsy should be performed on a deceased child unless the child was under doctor's care for a fatal disease. Full body radiographs may be ordered. After the autopsy, the investigator may need to search for additional evidence depending on the pathologist's findings.

P. Near Death

In some cases the child is removed from the home or facility prior to death. Investigators need to assess the probability of survival of the child. Medical personnel will be able to offer information concerning the long term survival chances of the child. If the child is expected to die, these protocols should be followed after legal advice is obtained. These protocols offer guidance for death cases, but they may be useful for non-fatal injuries involving children.

Q. Press Relations

Death cases involving children usually generate a lot of publicity. Care should be taken to follow Department press guidelines and the American Bar Association's guidelines for release of information to the press.

R. Resources for Training and Consultation

The Colorado Child Fatality Review Committee may be contacted for assistance in training or for consultation.

For information, call:

Coordinator Child Fatality Review Injury Prevention Program
Colorado Department of Public Health & Environment
(303) 692-2592

These guidelines were produced in 1990 by the Colorado Child Fatality Review Committee and revised in March 1993 as a tool for those who investigate child deaths.

STATE OF COLORADO

CERTIFICATE OF DEATH

STATE FILE NUMBER

DECEDENT

1. DECEDENT'S NAME (*First, Middle, Last*) | 2. SEX | 3. DATE OF DEATH (*Month, Day, Year*)

4. SOCIAL SECURITY NUMBER | 5a. AGE - Last Birthday (*Years*) | 5b. UNDER 1 YEAR Mos : Days | 5c. UNDER 1 DAY Hrs : Mins | 6. DATE OF BIRTH (*Month, Day, Year*) | 7. BIRTHPLACE (*City and State or Foreign Country*)

8. WAS DECEDENT EVER IN U.S. ARMED FORCES? ☐ Yes ☐ No

9a. PLACE OF DEATH (*Check only one*)
HOSPITAL: ☐ Inpatient ☐ ER/Outpatient ☐ DOA
OTHER ☐ Nursing Home ☐ Residence ☐ Other (*Specify*)

9b. FACILITY NAME (*If not institution, give street and number*) | 9c. CITY, TOWN, OR LOCATION OF DEATH | 9d. COUNTY OF DEATH

10a. DECEDENT'S USUAL OCCUPATION (*Give kind of work done during most of working life. Do not use retired.*) | 10b. KIND OF BUSINESS/INDUSTRY | 11. MARITAL STATUS - Married, Never Married, Widowed, Divorced (*Specify*) | 12. SPOUSE (*If wife, give maiden name*)

13a. RESIDENCE-STATE | 13b. COUNTY | 13c. CITY, TOWN, OR LOCATION | 13d. STREET AND NUMBER

13e. INSIDE CITY LIMITS? ☐ Yes ☐ No | 13f. ZIP CODE | 14. WAS DECEDENT OF HISPANIC ORIGIN? (Specify No or Yes - If yes, specify Cuban, Mexican, Puerto Rican, etc.) ☐ No ☐ Yes *Specify:* | 15. RACE: American Indian, Black, White, etc. (*Specify*) | 16. DECEDENT'S EDUCATION (*Specify only highest grade completed*) Elementary or secondary (*0 through 12*) College (13 through 16 or 17+)

PARENTS

17. FATHER-NAME (*First, Middle, Last*) | 18. MOTHER-NAME (*First, Middle, Last (Maiden Name)*) | 19. INFORMANT-NAME and relationship to deceased.

DISPOSITION

20a. METHOD OF DISPOSITION
☐ Burial ☐ Cremation ☐ Removal from State
☐ Donation ☐ Other (*Specify*) _____

20b. PLACE OF DISPOSITION (*Name of cemetery, crematory, or other place*) | 20c. LOCATION - City or Town, State

21a. SIGNATURE OF FUNERAL DIRECTOR OR PERSON ACTING AS SUCH ▶

21b. NAME AND ADDRESS OF FACILITY: ZIP:

22a. REGISTRAR'S SIGNATURE ▶ | 22b. DATE FILED (*Month, Day, Year*)

23. TIME OF DEATH M | 24. DATE PRONOUNCED DEAD *Month* *Day* *Year* *Hour* | 25. WAS CORONER NOTIFIED? (*Yes or No*)

CERTIFIER

TO BE COMPLETED ONLY BY CERTIFYING PHYSICIAN

26. To the best of my knowledge, death occurred at the time, date and place, and due to the cause(s) and manner as stated.
Signature ▶

28. DATE SIGNED (*Month, Day, Year*)

TO BE COMPLETED BY CORONER

27. On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place, and due to the cause(s) and manner as stated.
Signature ▶

29. DATE SIGNED (*Month, Day, Year*)

30. NAME, TITLE AND MAILING ADDRESS OF CERTIFIER/CORONER (*Type/Print*) ZIP:

31. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (*Type/Print*)

1 _____
2 _____
3 _____
4 _____
5 _____

32. MANNER OF DEATH
☐ Natural ☐ Pending Investigation
☐ Accident
☐ Suicide ☐ Undetermined Manner
☐ Homicide

33a. DATE OF INJURY (*Month, Day, Year*) | 33b. TIME OF INJURY M | 33c. INJURY AT WORK? ☐ Yes ☐ No | 33d. DESCRIBE HOW INJURY OCCURRED

33e. PLACE OF INJURY-At home, farm, street, factory, office building, etc. (*Specify*) | 33f. LOCATION (Street and Number or Rural Route Number, City, County, State)

CAUSE OF DEATH

PART I CONDITIONS IF ANY WHICH GAVE RISE TO IMMEDIATE CAUSE STATING THE UNDERLYING CAUSE LAST

34. IMMEDIATE CAUSE [*ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c).*] Do not enter mode of dying (e.g. Cardiac or Respiratory Arrest) alone. | Interval between onset and death

(a) _____
DUE TO OR AS A CONSEQUENCE OF | Interval between onset and death

(b) _____
DUE TO OR AS A CONSEQUENCE OF | Interval between onset and death

(c) (c)

PART II OTHER SIGNIFICANT CONDITIONS - Conditions contributing to death but not related to cause in PART I (e.g., alcohol abuse, obesity, smoker).

35. AUTOPSY (*Yes or No*) | 36. IF YES were findings considered in determining cause of death?

CHILD FATALITY REVIEW
Face Sheet

Certificate # __ __ __ __ __ __ Date of death __ __/__ __/__ __

CATEGORY OF DEATH BY COMMITTEE AGREEMENT (CHECK ONE):

Natural __ Accident __ Suicide __ Homicide __ Undetermined __

WAS CATEGORY RECLASSIFIED? Yes __ No __ Unknown __

****KNOWN MEDICAL COMPLICATIONS OR CIRCUMSTANCES?*** Yes __ No __ Unknown __

(If yes, check all that apply.) Cancer __ Infection __ Malformation __ Metabolic/Genetics __
SIDS __ Post-surgical __ Prematurity __ Other known complication _____

IS THE DEATH CERTIFICATE COMPLETED ADEQUATELY? Yes __ No __ Unknown __

If no, the problem was with (Check all that apply)

Manner __ Cause __ Circumstances __ Certifier __ Other _____

****IS THE BIRTH CERTIFICATE CONSISTENT WITH THE DEATH CIRCUMSTANCES FOR INFANT DEATHS?*** Yes __ No __ Unknown __ Not applicable __

If no, explain _____

PREVENTABLE DEATH? Yes __ No __ Unknown __

Supplemental data forms are required for preventable deaths and deaths of unknown preventability.

IS A POLICY ISSUE RAISED BY THIS CASE? Yes __ No __ Unknown __

If yes, explain:_____

If ACCIDENT OTHER THAN MV: Drowning __ Fall __ Fire __ Hanging __ Choking __
Suffocation __ Medical __ Other (Specify) _____

***IF MOTOR VEHICLE INCIDENT/CRASH*:** (Check all that apply.)

Child under age/weight and carseat not used __ No seat belt used __ Inexperienced driver __
Cycle accident and no helmet in use __ Backing vehicle __ Unsafe circumstance __ Excessive speed __
Child ran/rode into street __ Other (specify) _____
Negligence __

BAC (driver) .__ __ __ BAC (decedent) .__ __ __

Role of decedent? Driver __ Passenger __ Pedestrian __ Bicyclist __

IF SUICIDE: Runaway __ Life crisis __ Recent suicide (friend/relative) __ Gun available in home __ Previo
mental health problem: Treated __ Untreated __ Prior suicide attempt __ Handicap __
Other (Specify) _____

Comments:
_____
_____
_____
_____
_____
_____

Signature _____ Date: ___/___/___
Revised: 1/20/94

Cert # __ __ __ __ __ CFR Supplemental Data

WAS THE INVESTIGATION ADEQUATE? Yes__ No __ Unknown __

If no, please explain _____

WAS QUALITY OF MEDICAL CARE QUESTIONED? Yes __ No __ Unknown __

If yes, what was the question? _____

WERE DRUGS/ALCOHOL RELATED TO THE EVENT? Yes __ No (Ruled out) __ Unknown __

If yes, specify: Drugs (Specify _____) Alcohol __ Other (specify) _____
Explain: _____

ABUSE/NEGLECT HISTORY ON SIBLINGS? Abuse __ Neglect __ Both __ No __ Unknown __

ABUSE/NEGLECT HISTORY ON DECEDENT? Abuse __ Neglect __ Both __ No __ Unknown__

ABUSE/NEGLECT HISTORY ON OTHER FAMILY? Abuse __ Neglect __ Both __ No __ Unknown__

OTHER HISTORY ON FAMILY? Yes __ No __ Unknown__

If yes, explain_____

ABUSE NEGLECT RELATED TO DEATH? Abuse __ Neglect __ Both __ No __ Unknown __

If abuse or neglect, perpetrator (Check all that apply):
Father __ Mother __ Stepparent __ Other relative __ Boyfriend __ Other unrelated person __
Licensed child care provider __ Unlicensed child care provider __ Other (specify) __ _____

***AGENT OF INJURY*:** (Check all that apply)

Blunt weapon __ Rifle __ Handgun __ Hot liquid __ Starvation __ Shaking __ Dropping __
Striking __ Suffocation __ Poisoning __ Fire __ Burns __ Motor vehicle __ Hanging __
Drowning __ Exposure __ Fall __ Medical/drug __ Choking __
Other _____

PLACE OF OCCURRENCE: Home __ Pool __ Bathtub __ Creek/pond/river __
Other (Specify) _____

ANY MILITARY INVOLVEMENT: Yes __ No __ If yes, who? _____

CHILD DEVELOPMENTALLY DISABLED: Yes __ No __ If yes, how? _____

HAD PUBLIC AGENCIES BEEN INVOLVED? Yes __ No __ Unknown __

If yes, specify _____

WERE CHARGES FILED? Yes __ No __ Pending __ Unknown __

If yes, disposition: Acquitted __ Probation __ CC __ Jail __ Prison __ Pending __ Unknown __

COULD THE FOLLOWING FACTORS HAVE PREVENTED THE DEATH? (If yes, explain)

Prudent judgment Yes ___ No ___ NA ___ Explain _____
Supervision Yes ___ No ___ NA ___ Explain _____
Access to care Yes ___ No ___ NA ___ Explain _____
Timely treatment Yes ___ No ___ NA ___ Explain _____

PREVENTION STRATEGY:

_____
_____
_____

INTERAGENCY AGREEMENT TO ESTABLISH THE MULTI-DISCIPLINARY CHILD FATALITY REVIEW COMMITTEE

This cooperative agreement is made this 15TH day of OCT. 1995 between the Colorado Department of Human Services, 1575 Sherman Street, Denver, Colorado 80203-1714 (hereinafter referred to as Human Services) and the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80222-1530 (hereinafter referred to as Health & Environment).

WHEREAS, the parties hereto are vested with the authority to promote and protect the public health and to provide services which improve the well-being of children and their families.

WHEREAS, under CRS 25-1-107(dd)(1)(B), Health & Environment has statutory authority ... to investigate and determine the epidemiology of those conditions which contribute to preventable ... death and disability, and also under CRS 25-2-117 to use Vital Records for research conducted in the public interest.

WHEREAS, under CRS 19-3-301, otherwise known as the Child Protection Act, Human Services has the responsibility to protect the well-being of children and their families.

WHEREAS, the parties agree that they are mutually served by the establishment of a Multi-disciplinary Child Fatality Review Committee, and that the expected outcome of such review will be the identification of preventable deaths and recommendations for intervention and prevention strategies.

WHEREAS, the objectives of the Review Committee are agreed to be:

1) To describe trends and patterns of child deaths in Colorado.
2) To identify and investigate the prevalence of a number of risks and potential risk factors in the population of deceased children.
3) To evaluate the service and system responses to children and families who are considered to be at high risk, and to offer recommendations for improvement in those responses.
4) To characterize high risk groups in terms that are compatible with the development of public policy.
5) To improve the sources of data collection by developing protocols for autopsies, death investigations, and complete recording of cause of death on the death certificates.

WHEREAS, both parties agree that the membership of the Review Committee needs to be comprised of the following disciplines; law enforcement, judiciary, medical, public health, social services, law, coroners, and a legislator, with specific membership from designated agencies to include, but not limited to, the Denver Coroner's Office, Colorado Hospital Association, Colorado Medical Society, American Academy of Pediatrics, C. Henry Kempe National Center for the Treatment and Prevention of Child Abuse and Neglect, the Colorado SIDS Program, Inc., and Coroners Association.

WHEREAS, both parties agree that the review process requires case specific sharing of records and confidentiality is inherent in many of the involved reports, there will be clear measures taken to protect confidentiality.

NOW THEREFORE, it is hereby agreed to establish a Multi-disciplinary Child Fatality Review Committee under the official auspices of Health & Environment and Human Services, subject to renewal of the Interdepartmental Agreement on a five-year basis. All members of the Child Fatality Review Committee will sign a confidentiality statement that prohibits any unauthorized dissemination of information beyond the purpose of the review process. Non-identified, aggregate data will be collected by the committee. The review committee shall not create any new files with specific case identifying information. Case identification will only be utilized in the review process in order to enlist interagency cooperation, and no material may be used for reasons other than that which was intended. It is further understood that there may be individual cases reviewed by the committee which require that a particular agency be asked to take the lead in addressing a systemic or quality of care issue based on that agency's clear connection with the issue at hand.

Barbara McDonnell
Executive Director
Colorado Department of
Human Services

Patti Shwayder
Acting Executive Director
Colorado Department of
Public Health and Environment

Colorado Child Fatality Review Committee

Karen Abrahamson
Alcohol & Drug Abuse Division
Colorado Department of Human Services

Barbara Alexander
Victim Assistance Program
Arapahoe County Sheriff's Office

Scott Anthony
Weld County Coroner

Barb Bailey
El Paso County Department of Health & Environment

Sergeant R. Beatty
Arapahoe County Sheriff's Office

Jane Beveridge
Child Protection Program
Colorado Department of Human Services

Roberta Boitano
Consumer Specialist
Colorado Department of Public Health & Environment

Louise Boris
Mental Health Services

Don Bross PhD
Kempe National Center

Detective Gerri Burggraff
Aurora Police Dept.

Joe Carney
Health Statistics & Vital Records
Colorado Department of Public Health & Environment

Mary Chase
Injury Prevention
Colorado Department of Public Health & Environment

Jane Cotler RN
Colorado Department of Public Health & Environment

David Denson
Central Registry
Colorado Department of Human Services

Michael Dobersen MD
Arapahoe County Coroner

Mary Dreger
Safehouse Denver

Tom Faure
Chief Medical Investigator
Boulder County Coroner's Office

Carol Garrett PhD
Health Statistics Section
Colorado Department of Public Health & Environment

Maile Gray
Drive Smart -
Colorado Springs

Candace Grosz
Division of Criminal Justice

Deborah Haack
Injury Prevention
Colorado Department of Public Health & Environment

Tom Henry MD
Office of the Medical Examiner, Denver

Jacinto Hernandez MD
Neonatology Dept.
The Children's Hospital

Susan Hiatt
Kempe Center

Barbara Howe
Mercy Medical Center, Durango

Detective Rick Hunt
Major Crimes Unit
Colorado Springs Police Department

Kathie Jackson
Prevention Initiatives Unit
Colorado Department. of Education

Joyce Jennings
Colorado Children's Trust Fund

Susan Ludwig
Child Protection Services
Colorado Department of Human Services

Phyllis Madden
Denver Osteopathic Foundation

Carol Mann
Childhood Injury Prevention
Colorado Department of Public Health & Environment

Sheila Marquez RN/PNP
Colorado SIDS Program

Amy Martin MD
Office of the Medical Examiner, Denver

Larry Matthews MD
Pediatrician

Janet McNally RN
Children with Special Needs
Colorado Department of Public Health & Environment

Janet Mickish PhD
Center for the Study & Prevention of Violence

Dave Miller
Emergency Medical Services
Colorado Department of Public Health & Environment

Sergeant Holly Nicholson-Kluth
Douglas County Sheriff's Department

Mim Orleans PhD
Preventive Medicine & Biometrics
University of Colorado Health Sciences Center

Ed Orsini MD
Pathology Department
The Children's Hospital

Sergeant Kevin Paletta
Juvenile Investigations
Lakewood Police Department

Elinora Reynolds
Office of Transportation Safety
Colorado Department of Transportation

Donna Rosenberg MD
Department of Pediatrics
University of Colorado Health Sciences Center

The Honorable Dorothy Rupert
State Senator

Linda Satkowiak RN
The Children's Hospital

Investigator Allen Simmons
Jefferson County Sheriff's Department

Jill-Ellyn Straus
Chief Trial Deputy
Adams County District Attorney's Office

Marie Swigert RN, MS
Public Health Nurse

Courtney Thomas RN
Child Health
Colorado Department of Public Health & Environment

Lynn Trefren RN
Tri-County Health Department

Tom Waddill
Victim Assistance Coordinator
Lakewood Police Department

James Wahe MD
Office of the Medical Examiner, Denver