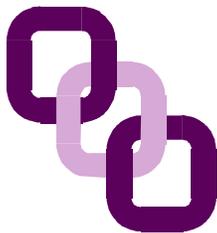


COLORADO



Child Fatality Review Committee

BRIEF

April 1999

Motor Vehicle-related Child Fatalities Colorado 1995-97

Motor vehicle-related injuries are the leading cause of death for children ages 1-17 years. A subcommittee of the Colorado Child Fatality Review Committee composed of injury prevention and transportation safety specialists reviews all child deaths (ages 0-17) that are related to motor vehicles. Cases are identified by death certificate data from the Division of Health Statistics & Vital Records, Colorado Department of Public Health & Environment. The primary source for crash information is the Fatality Analysis Reporting System (FARS). Motor vehicle accident reports from Colorado and other states are used for those cases that are not included in the FARS data. *Cases in which the original injury occurred in another state and the death occurred in Colorado are included, as are Colorado deaths of non-residents. Crashes that*

occurred on private property and deaths that occurred more than a month after the crash are also included. These criteria are different than those used by Health Statistics or FARS, and these data may not match other statistics reported on both state and national levels.

In the three-year period 1995-97, there were 297 child fatalities in Colorado that were the result of motor vehicle crashes. Crashes include motor vehicle, bicycle, and pedestrian collisions. There were a small number of cases in which a child riding a go-cart was struck by a motor vehicle or a child was unattended in a motor vehicle and engaged the gears. These have been classified as “other” for the variable “role.”

The 297 motor vehicle-related fatalities were the result of 265 crashes. There were 184 fatalities (62%) in which at least one driver involved in the crash was under 21 years of age. In order to better understand the role of young drivers in child fatalities, crashes in which at least one driver was under 21 were selected for particular attention. Of the 265 crashes, there were 154 (58%) in which at least one driver was under 21 years of age. Some of the tables in this report are based on fatality data and some on crash data (indicated in each table and reflected in the total “n” for each category).

**Table 1: Motor vehicle-related child fatalities by age and gender
Colorado 1995-97, ages 0-17 years**

Age Group	All fatalities, n=297			Driver <21 [†] , n=184		
	Male	Female	Total	Male	Female	Total
0	3	10	13	10	8	18
1-4	19	20	39			
5-9	15	12	27			
10-14	38	32	70	16	16	32
15-17	79	69	148	71	63	134
Total	154	143	297	97	87	184

[†]At least one driver involved in crash was under 21 years of age

Demographics

Overall, males are slightly overrepresented in the group of fatalities (Table 1), as they are in the general population of children less than 18 years of age, resulting in very similar death rates for males and females (9.9 and 9.6 per 100,000 Colorado resident population ages 0-17, respectively, using 1997-based population estimates). The proportion of male fatalities increases in the older age groups, as does the rate at 31.9 per 100,000 for the 15-17 year male age group.

Females in the 15-17 year age group have a rate of 29.3 per 100,000.

Prevention Strategy

Begin safe pedestrian, bicycle, and driving messages early...elementary, middle school, and high school.



There is some disparity by race/ethnicity as well. In this age group, white Hispanics represent 16 percent of the population but account for 21 percent of motor vehicle-related fatalities, while white non-Hispanics are underrepresented at 71 percent of fatalities and 76 percent of the population.

Circumstances

Approximately 80 percent of children who died as a result of motor vehicle-related injuries were drivers or passengers in vehicles, including motorcycles, with almost one third of that group driving the vehicle. Table 2 shows the distribution of roles of the child fatalities. Eleven of the 73 young drivers who were killed were under age 16, thirty-three were 16, and twenty-nine were 17. Non-occupant fatal injuries were primarily to pedestrians (14%) and bicyclists (5%).

Table 2: Role of deceased child Colorado 1995-97, ages 0-17 years

Role	All fatalities, n=297		Driver <21†, n=184	
	Number	Percent	Number	Percent
Driver	73	24.6%	73	39.7%
Passenger	164	55.2%	97	52.7%
Pedestrian	40	13.5%	10	5.4%
Bicyclist	16	5.4%	3	1.6%
Other	4	1.3%	*	*

† At least one driver involved in crash was under 21 years of age
 * Fewer than three occurrences

Prevention Strategy



Pedestrians should be taught to cross at designated intersections or crosswalks after always looking in both directions.

Only 17 percent of children who were drivers or passengers in vehicles in which seat belts or child seats should have been used were restrained (Table 3). This percentage drops to 13 percent of those fatalities in which at least one driver was under 21 years of age. At every age, more children were unrestrained than restrained, including 10 of 13 infants <1 year of age who were not in car seats or were in car seats which were not being used correctly. Only 10 percent of 17-year-olds were restrained, while 19 percent of 16-year-olds were wearing seat belts.

Table 3: Restraint used by decedent† Colorado 1995-97, ages 0-17

Restraint	All fatalities, n=233		Driver <21†, n=164	
	Number	Percent	Number	Percent
Yes	40	17.2%	22	13.4%
No	192	82.4%	142	86.6%

†Incidents in which decedent was occupant of moving vehicle
 †At least one driver involved in crash was under 21 years of age

Properly installed child car seats and use of seat belts can prevent both fatalities and injuries. According to the National SAFE KIDS Campaign, child safety seats are extremely effective when correctly installed, reducing the risk of death by 71 percent for infants and by 54 percent for children ages 1-4 years. In January 1998, a Colorado State University survey showed that 90 percent of the time, when adults buckle up, children also use their seat belts. The same study found that in vehicles with unrestrained adult drivers, only 11 percent of children ages 4-15 years were restrained.

Prevention Strategy

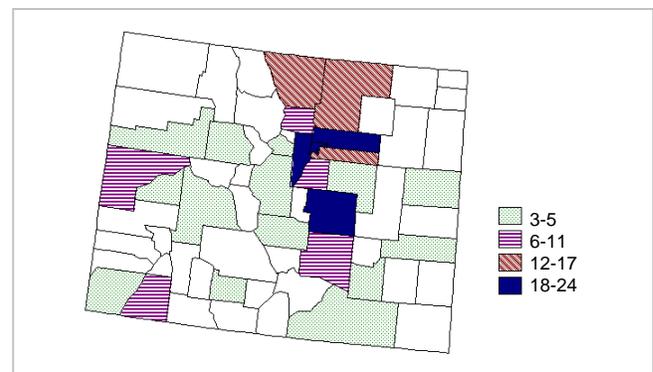


All occupants in vehicle should be appropriately restrained with a car seat or a seat belt, according to size and age.

Not surprisingly, Friday and Saturday were the days on which the largest number of crashes occurred (19% each) while Tuesday and Wednesday had the lowest numbers (9% and 10%, respectively). This distribution was basically the same for the crashes in which at least one driver was under 21. More crashes occurred in the afternoon and evening than in the morning hours. Two thirds of the 265 crashes occurred between noon and midnight, with almost 19 percent occurring between 3:00 and 6:00 p.m.

Of the 265 crashes, nine occurred in states other than Colorado. The remaining 256 crashes were distributed among Denver metro (Adams, Arapahoe, Boulder, Denver, Douglas, Jefferson), other metro (El Paso, Larimer, Mesa, Pueblo, Weld), and rural counties of the state as follows: Denver metro 88, other metro 74, rural 94 (Figure 1). Rural rates are higher than those of the other two groups.

Figure 1: Motor vehicle crashes by county if >2, n=221 Colorado 1995-97, ages 0-17 years



Prevention Strategy



Education on rural driving safety, including caution at intersections, reduced speed on gravel roads, and stop sign compliance.

Young Drivers

One of the issues that is repeatedly identified when prevention strategies are discussed is that of young drivers. Nationally, although driver ages 15-20 account for 7 percent of the driving population, they are involved in 14 percent of traffic fatalities (“Saving Teenage Lives,” NHTSA). In Colorado, 58 percent of crashes in which children died during 1995-97 involved drivers under the age of 21. Of the 154 crashes involving young drivers, 16-year-old drivers were involved in 37 percent and 17-year-olds in 29 percent (Figure 2).

Figure 2: Age of youngest driver in crashes in which at least one driver was under 21 Colorado 1995-97, ages 0-17 years



Prevention Strategy

Graduated licensing allows young drivers to gain the experience they need to become safe drivers.

Prevention Strategy

Encourage *mandatory* driver’s education, including a safe driving component, in high school.

Driver inexperience was determined by law enforcement to be a factor in at least 27 percent of crashes involving young drivers, while the Child Fatality Review Committee considered inexperience to be a factor in 73 percent of these crashes (Table 4). The multidisciplinary nature of the child fatality review process, along with its focus on prevention, probably accounts for the committee’s significantly stronger emphasis on this issue.

Teenagers may overestimate their driving ability and underestimate the risk involved with driving a motor vehicle. Safe driving requires more than understanding how to operate a vehicle, and it is possible that advanced driver’s education that focuses on safety issues could be a valuable complement to more traditional driver’s education. The combination of immaturity and inexperience may account for the high numbers of 16- and 17-year old drivers involved in the crashes that result in child fatalities. Graduated licensing is one strategy that addresses this problem, and it has been implemented in a variety of forms in the states that have adopted it. Some of the components that are typically included are an extended period of driving with adult supervision, a night driving curfew, limits on the number of other teens who can be in the vehicle, and the requirement that all occupants wear seat belts.

Excessive speed, either above the speed limit or too fast for conditions, is also a factor in many of these crashes and was determined to be related to 62 percent of the crashes in which at least one driver was under 21 compared to 51

percent of all crashes (Table 4). Alcohol (BAC>.05) was present in almost the same proportion of crashes involving young drivers as in child fatality crashes overall, at approximately 15 percent. Drugs were present more often in the crashes involving young drivers at 14 percent compared to 8 percent of the total. The estimates for alcohol and drug involvement in these crashes may be conservative because these tests are not always performed.

Table 4: Determination of related factors Colorado 1995-97, ages 0-17

Factors	All crashes, n=265		Driver <21†, n=154	
	Number	Percent	Number	Percent
Inexperience found by law enforcement	43	16.2%	42	27.3%
Inexperience found by child fatality review	114	43.0%	113	73.4%
Speed	134	50.6%	96	62.3%
Alcohol	45	15.2%	23	14.9%

†At least one driver involved in crash was under 21 years of age

Prevention Strategy

Increase awareness of *adverse weather* driving safety - lower speeds and extra room between vehicles.

Conclusions

The word “accident” implies an act of fate about which nothing could be done. The words we choose can affect how others view events. Data support the hypothesis that most motor vehicle crashes are not truly accidents but predictable and preventable events.

Data analysis provides a guide for our efforts to understand and prevent this number one killer of children - motor vehicle-related unintentional injuries. Most of us have heard dozens of common sense safety messages, but in the context of preventable child fatalities, these messages can take on new meaning and become real avenues for behavior change and injury prevention. The prevention tips in this report may not be new to the reader, but they address the issues that have arisen time and again as motor vehicle-related child fatalities are reviewed in detail. The fact that motor vehicle-related child fatalities are almost entirely preventable gives us hope that these numbers will be reduced as these safety messages continue to be stressed and individuals choose to incorporate these behaviors into their lives.

The Colorado Child Fatality Review Committee is a multidisciplinary team which has been reviewing all child deaths that occur in Colorado since 1989. The goals of the committee include describing patterns of child death in Colorado, identifying the prevalence of risk factors for child death, characterizing high-risk groups in terms compatible with the development of public policy, evaluating system responses to children and families who are at high risk and offering recommendations for improvement in those responses, and improving the quality of data necessary for child death investigation and review. A fundamental purpose of the review process is the development and implementation of prevention strategies that are suggested by the in-depth review of the

A Few Useful Web Sites

National Highway Traffic Safety Administration

<http://www.nhtsa.dot.gov/>

National Safe Kids Campaign

<http://www.safekids.org/>

Fatality Analysis Reporting System

<http://www-fars.nhtsa.dot.gov/>

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Supported in part by Project H28-MC-00006-01 from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, Department of Health and Human Services.



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