



Colorado Department  
of Public Health  
and Environment

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Table 1. Deaths of teen drivers,  
Colorado, 1991-2002

	16 year old	17 year old
1991	5	4
1992	3	7
1993	10	*
1994	7	14
1995	9	9
1996	10	8
1997	10	9
1998	10	8
1999	10	8
2000	*	8
2001	*	8
2002	9	6

\*Fewer than 3 deaths

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# Injury Prevention Fact Sheet

## Deaths and Hospitalizations Involving Teen Drivers in Colorado

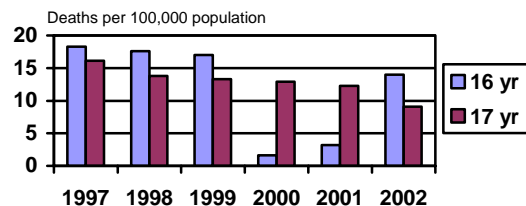
Motor vehicle crashes are the leading cause of death among U.S. teenagers. Per mile driven, crash rates among 16-19 year old drivers are higher than those for all other age groups. The crash risk among 16-17 year old drivers is nearly three times as high as among 18-19 year old drivers.<sup>1</sup> In Colorado, 42 percent of all deaths of 16-17 year olds are due to motor vehicle crashes, and 35 percent of injury hospitalizations for that age group are due to motor vehicle crash injuries.<sup>2</sup>

Two factors commonly mentioned to account for the high motor vehicle crash rates for young drivers are inexperience and risk taking. A recommended intervention to address this problem is graduated driver licensing, where young drivers can gain experience under controlled conditions. Colorado's graduated driver licensing provisions went into effect July 1, 1999.<sup>3</sup>

### Teen Driver Deaths<sup>4</sup>

For the past 10 years, the number of 16-17 year old drivers killed in motor vehicle traffic crashes in Colorado has remained relatively low with slight fluctuations from year to year (Table 1). The number of 16 year olds who died as drivers of motor vehicles decreased in year 2000 and remained low in 2001 (Table 2). However, the number of deaths increased in 2002.

Figure 1. Motor vehicle driver death rates, Colorado, 1997-2002



To compare annual changes, a more appropriate measure is the death rate (the number of deaths per 100,000 population). The death rate takes into account any changes in the population over time. For example, there were 9,393 more 16 year olds in Colorado in 2002 than in 1997.

The rate of 16 year old driver deaths decreased significantly in 2000 (Table 2 and Figure 1). The death rate remained low in 2001, however, statistically, the rate was not

significantly lower than the rates in 1997 through 1999. Also, the death rate in 2002 was not significantly lower than the rates in 1997 through 1999. Although the death rates for 17 year old drivers appears to have decreased over time, the rates are not statistically different for 1997 through 2002, due to the small number of deaths.

The death rates for 16-17 year old drivers do not differ significantly between males and females.

Table 2. Motor vehicle driver deaths, frequency and rates<sup>+</sup>, Colorado residents, 1997-2002

	Year	1997	1998	1999	2000	2001	2002
16 year old	Number	10	10	10	*	*	9
	Rate <sup>+</sup> CI <sup>++</sup>	18.3 (6.0-30.5)	17.6 (5.8-29.4)	17.0 (5.6-28.4)	# **	**	14.0 (4.1-24.0)
17 year old	Number	9	8	8	8	8	6
	Rate <sup>+</sup> CI <sup>++</sup>	16.1 (4.7-27.4)	13.8 (3.4-24.2)	13.3 (3.3-23.4)	12.9 (3.2-22.7)	12.3 (3.0-21.6)	9.1 (1.1-17.1)

\* Indicates fewer than 3 events in the category

\*\* Indicates a rate based on fewer than 3 events in the category

<sup>+</sup> Rates are number of events per 100,000 population

<sup>++</sup> CI = 95% Confidence interval. When CIs do not overlap, the difference between the rates is statistically significant

# Difference between this rate and the rate in 1999 is statistically significant, at p <0.05.

## Teen Driver Hospitalizations<sup>5</sup>

An average of 128 Colorado teen drivers ages 16-17 years are hospitalized each year for injuries resulting from motor vehicle crashes.

Table 3. Teen drivers hospitalized for injuries due to motor vehicle crashes, frequency and rates, Colorado residents, 1997-2002

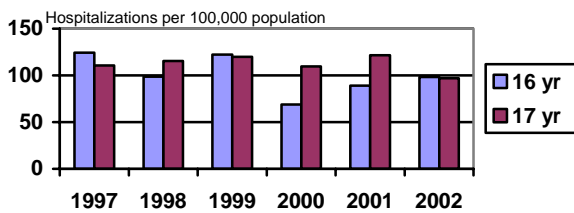
	Year	1997	1998	1999	2000	2001	2002
16 year old	Number	68	56	72	42	56	63
	Rate <sup>+</sup> CI <sup>++</sup>	124.3 (93.9-154.7)	98.7 (72.0-125.4)	122.3 (93.2-151.4)	<b>68.8<sup>#</sup></b> <b>(47.2-90.5)</b>	88.9 (64.8-113.0)	98.3 (73.2-123.3)
17 year old	Number	62	67	72	68	79	64
	Rate <sup>+</sup> CI <sup>++</sup>	110.6 (82.2-139.0)	115.5 (87.0-144.1)	120.0 (91.5-148.6)	109.7 (82.9-136.6)	121.5 (93.9-149.0)	96.8 (72.3-121.2)

<sup>+</sup> Rates are number of events per 100,000 population

<sup>++</sup> CI = 95% Confidence interval. When CIs do not overlap, the difference between the rates is statistically significant

<sup>#</sup> Difference between this rate and the rate in 1999 is statistically significant, at p<0.05.

Figure 2. Motor vehicle driver injury hospitalization rates, Colorado, 1997-2002



For 16-year olds the hospitalization rate decreased significantly in 2000 and returned to 1997-1999 rates in 2001 and 2002. There were no statistically significant changes in the hospitalization rates for 17-year old drivers from 1997 through 2002 (Table 3 and Figure 2).

The hospitalization rates do not differ significantly between males and females.

## Teen Passengers<sup>6</sup>

Teen passengers, ages 13-17, are also at risk of death and injuries when teens are drivers of the vehicle. From 2000-2002, 74 teens, ages 13-17, died while passengers in a motor vehicle crash. Forty-three percent of those teens were riding in a vehicle with a driver who was 16 or 17 years old.

In nearly half (47 percent) of the crashes in 2000-2002 in which the teen driver age 16-17 was killed, there were one or more passengers in the vehicle of the teen driver. Eighty-seven percent of the passengers were other teens between 14-19 years old, and the rest of the passengers were adults over age 19.

## Prevention Strategies

Seatbelts are known to be 45 percent effective in reducing the risk of fatal injury for adults.<sup>7</sup> For the drivers age 16-17 who died in 2000-2002, 61 percent were unrestrained.<sup>6</sup> Compared to other age groups, teens have the lowest rate of seat belt use.<sup>8</sup> In 2001, 12 percent of Colorado 16-17 year olds surveyed reported they rarely or never wear seat belts when riding with someone else.<sup>9</sup>

Other risk factors for injuries of teen drivers are underestimating the dangers in hazardous situations; engaging in high-risk behavior such as speeding and driving after using alcohol or drugs; nighttime driving; and the impact of driver distractions including the presence of passengers.<sup>8, 10</sup> Possible strategies to reduce teen deaths, injuries, and crashes include a combination of strong graduated driver licensing laws, enhanced enforcement of all traffic safety laws, and increased parental management of young drivers.<sup>10</sup>

## References

- <sup>1</sup> Insurance Institute for Highway Safety. (2003) Fatality Facts: Teenagers 2002. Retrieved February 12, 2004 from <http://www.hwysafety.org> (fatality facts).
- <sup>2</sup> Colorado Department of Public Health and Environment. (2004) Colorado Health Information Dataset (CoHID). Available at <http://www.cdphe.state.co.us/cohid>
- <sup>3</sup> Insurance Institute for Highway Safety. (2003) Licensing Systems for Young Drivers. Retrieved February 12, 2004 from [http://www.hwysafety.org/safety\\_facts/state\\_laws/grad\\_license.htm](http://www.hwysafety.org/safety_facts/state_laws/grad_license.htm).
- <sup>4</sup> The death statistics in this report come from the death certificate data compiled by the Health Statistics Section at CDPHE. The death data were linked to death data from the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS) database. Population data for rate calculations came from CoHID at <http://www.cdphe.state.co.us/cohid>
- <sup>5</sup> The hospitalization statistics in this report come from hospital discharge data compiled by the Colorado Health and Hospital Association. Population data for rate calculations came from CoHID at <http://www.cdphe.state.co.us/cohid>
- <sup>6</sup> The data in this section comes from the NHTSA FARS database at <http://www-fars.nhtsa.dot.gov>. Because the sources of data are slightly different, there are slight differences between numbers reported in FARS and CDPHE databases.
- <sup>7</sup> National Highway Traffic Safety Administration. (2003) Traffic Safety Facts 2002: Occupant Protection. Retrieved January 15, 2004 from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002occfacts.pdf>
- <sup>8</sup> Centers for Disease Control and Prevention. (2004) Teen Drivers. Retrieved February 17, 2004 from <http://www.cdc.gov/ncipc/factsheets/teenmvh.htm>
- <sup>9</sup> Health Statistics Section. Colorado Department of Public Health and Environment. (2003) Colorado Youth Risk Behavior Survey. Retrieved February 17, 2004 from <http://www.cdphe.state.co.us/hs/yrb>
- <sup>10</sup> Foss R and Goodwin A. (2003) Enhancing the effectiveness of graduated driver licensing. Journal of Safety Research 34:79-84.