

# The Epidemiology of Motor Vehicle Crashes Involving 16-17-Year-Old Drivers in Minnesota and Associated Hospital Charges

## Study Goals:

Determine the per miles driven rate of teenage driver motor vehicle crash involvement and the characteristics of these crashes in Minnesota. Measure medical care charges and the severity of injuries associated with crashes involving teenage drivers.

## Study Design:

To better understand medical outcomes pertaining to crashes, a Crash Outcomes Data Evaluation System (CODES) project was implemented. Minnesota crash records in 2002 were probabilistically linked with hospital emergency room and inpatient information. The CODES dataset linked nearly 27,000 crash reports with hospital emergency room and inpatient data. All reported differences are statistically significant at the 95 percent confidence level.

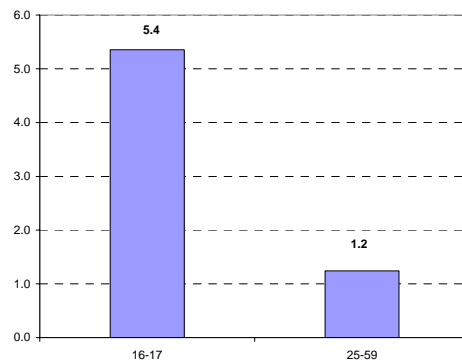
## Preliminary Findings:

Even though teens drive less than adults do, teenage drivers are overrepresented in motor vehicle crashes. In 2002, drivers ages 16–17 comprised 3.2 percent of the state’s licensed drivers and accounted for 2.1 percent of all the miles driven. Yet this group accounted for 8.7 percent of drivers in all crashes, 8.8 percent of drivers in injury crashes, and 8.6 percent of drivers in fatal crashes. Examination of the linked data showed motor vehicle crashes involving teenage drivers resulted in nearly \$11 million in hospital charges to all persons involved in the crashes.

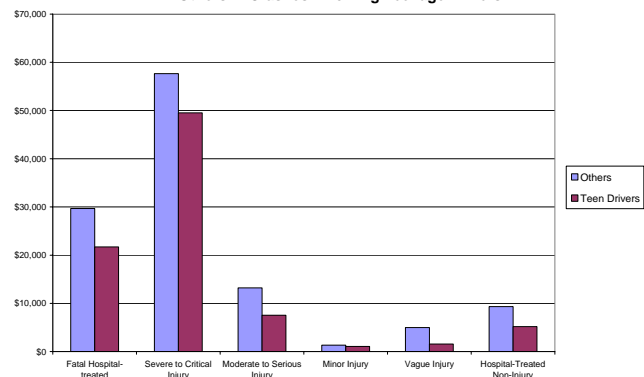
## Key Findings:

- Fatalities.** The per miles driven fatal crash involvement rate of 16–17 year-old drivers was 4.5 times that of adult drivers (ages 25–59).
- Crash Involvement.** The per miles driven crash involvement rate of 16–17-year-old drivers was 3 times that of adult drivers.
- Nighttime Crashes.** The per miles driven nighttime (10 p.m. – 4:59 a.m.) injury crash involvement rate of 16–17-year-old drivers was nearly 4 times that of adult drivers.
- Passengers.** Drivers ages 16-17 with two or more passengers in their vehicle were twice as likely to be involved in a fatal crash, and 1.5 times more likely to be involved in an injury crash than adult drivers with two or more passengers.
- Hospital Charges.** Inpatient and emergency department charges for 16-17-year-old drivers in crashes were nearly \$5 million. Charges for all persons in crashes involving novice teen drivers were nearly \$11 million. Average hospital charges are greater for others in crashes involving 16-17-year-old drivers than the teen drivers.

Fatal Crash Involvement Rate, 2002  
(per 100 Million Miles Driven)



Average Charges by Severity for Teenage Drivers and All Others in Crashes Involving Teenage Drivers



The above estimates are for hospital inpatient and emergency department charges only. They do not include fees paid to doctors or specialists and they do not include clinic visits. CODES represents a collaborative effort among the Minnesota Departments of Health, Public Safety, and Transportation, the Minnesota Hospital Association, and the Emergency Medical Services Regulatory Board. The facts presented here were derived from the 2002 CODES linked and Minnesota motor vehicle crash databases. For more information, call Scott Hedger at 651-201-7066 or visit CODES online at [www.dps.state.mn.us/OTS/crashdata/codes\\_project.asp](http://www.dps.state.mn.us/OTS/crashdata/codes_project.asp).