



Data Linkage Results

Teen Driver-related Crashes, 2009

The Oklahoma Traffic Data Linkage Project (TDLP) is a joint effort between the Oklahoma State Department of Health and the Oklahoma Highway Safety Office to link statewide traffic crash and health outcome databases. This report describes the circumstances and outcomes of persons in crashes that involved a teenage driver.

Inclusion of Cases

Teen driver-related crashes were identified from the traffic crash database as all incidents involving a teenage driver. Occupants included all drivers and any injured passengers from all vehicles involved.

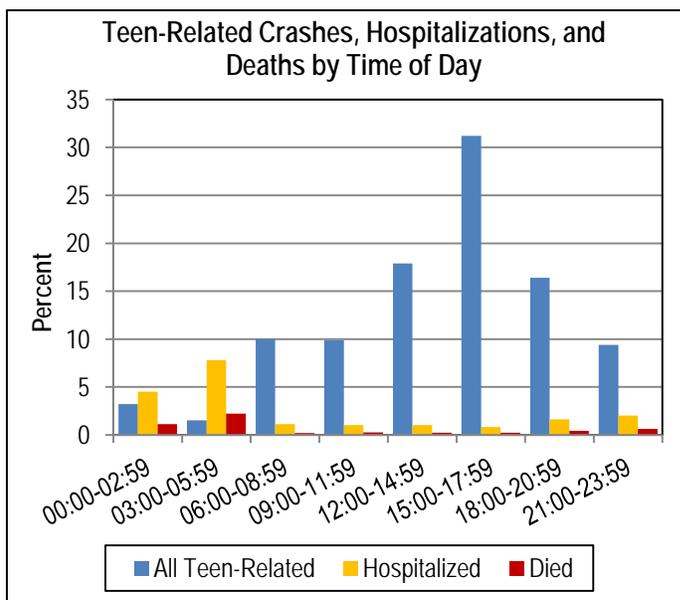
Introduction and Demographics

- Of 71,218 crashes reported in 2009, there were 15,052 (21%) incidents involving a teenage driver age 16 to 19.
- 33,811 people were identified as being in a teenage driver-related incident – 18,894 teenagers, 13,401 older than 19, and 944 children under 12, and 572 where age was missing.
- Fifty-one percent of the vehicles driven by a teenager were occupied by only the driver, 29.2% had one passenger, 12% had two passengers, 5% had three passengers and the remainder had four or more passengers. The distribution of the number of occupants was similar for older drivers, but a higher proportion had just the driver (57%).
- Two-thirds of the passengers of vehicles driven by a teen were also teens.
- Among those involved in the above teenage driver-related incidents, inpatient hospital stays were found for 445 individuals and 109 people died. Additionally, 2,991 were identified as having been treated and transported by EMS.
- Among the teenage drivers, 48% were female and 52% male – the rate of hospitalization or death for males (1.7%) was slightly higher than females (1.1%).

Circumstances

- Hospitalization or death was most frequent for crashes involving just the teen driven vehicle (6.3% versus <1% for multi-vehicle crashes) – these single vehicle crashes accounted for 18.8% of persons in teen-related crashes.
- For all persons involved in teenage driver-related crashes, a greater proportion of persons were hospitalized or died in rural crashes (4.9%) versus those occurring in an urban

- area (0.9%). Additionally, a much higher proportion of persons in rural crashes (17.3%) were treated and transported by EMS than those in urban crashes (6.9%).
- Though only 12.4% of the teen-related crashes occurred on a rural state/U.S. highway or county road, 47% of the hospitalizations or deaths occurred on this type of roadway.
- Alcohol was involved with 564 (3.4%) teen drivers and 272 (2.3%) older drivers that were in a crash with a teenager.
- 1,130 (3.3%) individuals (drivers and passengers) were involved in alcohol-related incidents; this group had a much higher proportion of hospitalizations or death (8.9%) as compared to those in incidents where alcohol use was not documented (1.4%). Additionally, for those with EMS records, 20.5% involved in alcohol-related incidents were treated and transported as compared to 8.4% in crashes where alcohol was not reported.
- Among persons in alcohol-related crashes, a greater proportion were hospitalized or died when the crash occurred in a rural area (14.7%) versus an urban area (5.4%).
- Nearly a third of the teen-related crashes occurred between 3 pm and 6 pm; 49% between noon and 6 pm. However, crashes occurring between midnight and 6 am had the highest rate of hospitalization or death at 6.6%, compared to 1.2% for 6 am to 6 pm and 2.2% for 6 pm to midnight. Moreover, 27.7% of the drivers in crashes midnight to 6 am were reportedly alcohol impaired, compared to 1% for 6 am to 6 pm and 5.2% for 6 pm to midnight.



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- Though the majority of persons were in crashes that occurred in daylight (76%), the crashes occurring in the dark with no roadway lighting had the highest proportion of hospitalizations or death (5.7%) as compared to daylight (1.2%) or dark with a lighted roadway (1.3%).
- For both teen and older drivers, the 'cause' of the crash was most frequently listed as 'no improper action' – however, for teen drivers, 'no improper action' accounted for 29.7% and for older drivers, it accounted for 68%.
- Some of the more frequent other 'causes' for older drivers included – 'failure to yield' (8.3%), 'following too closely' (4.9%), 'inattention' (3.7%), 'improper turn' (2.8%), and 'failure to stop' (2%).
- Some of the more frequent other 'causes' for teen drivers included – 'failure to yield' (14.2%), 'unsafe speed' (13.2%), 'inattention' (12.6%), 'following too closely' (9.1%), 'improper turn' (3.7%), and 'failure to stop' (3.3%).
- Among single vehicle teen crashes, 'unsafe speed' was noted as a cause 47% of the time (n=1,730); 110 (28.5%) of the 386 teen driver passengers that were hospitalized or died were involved in this type of crash.
- Of all 'causes', 'left of center' crashes had the highest rate of hospitalization and death for both teen (10%) and older drivers (11%).

Restraint Use

- Seat belt or child restraint use was reported for 94.6% of the individuals involved. Unrestrained status was higher among persons in a vehicle driven by a teenager (5.9%) versus those in other vehicles (2.5%). In vehicles driven by a teenager, 16.8% of the passengers were unrestrained, compared to 9% of persons in vehicles not driven by a teen.
- Overall, among those with a seat belt or child restraint in use, 1% were hospitalized or died, compared to 13.2% without a seat belt or child restraint in use.
- For persons in vehicles where the driver was a teenager, the difference for hospitalization or death was even greater for those using a seat belt or child restraint (1%) versus those with no restraint (15%).
- Less than 1% of persons reportedly restrained were documented as partially or totally ejected from the vehicle

as compared to 9% of those not restrained. The rate of hospitalization or death was 43% for persons ejected from the vehicle; it was 1.3% for those not ejected. Mortality was 17.6% for those ejected versus 0.2% for those not ejected.

- For persons in the vehicle driven by a teenager, 11% of those not wearing a seat belt were ejected; the rate of hospitalization or death was 48.3% among this group.

Hospital Charges and Primary Payer Source

- Median total hospital charges were very close for those persons in a vehicle driven by a teen (\$30,425) and those in a vehicle with an older driver (\$29,067).
- Median total hospital charges were also very similar for drivers (\$29,649) and passengers (\$30,202).
- Median total hospital charges were much higher for unrestrained persons in vehicles driven by a teen or older driver, but the difference was much greater for persons in a vehicle driven by an older driver [unrestrained (\$46,354), restrained (\$28,131)] than those in a vehicle driven by a teen [unrestrained (\$34,150), restrained (\$26,220)].
- Median total hospital charges were almost \$10,000 higher for female teen drivers (\$35,249) than male teen drivers (\$26,607) – the difference was not as large for older female drivers (\$29,866) versus older male drivers (\$28,041).
- Though there were 41 fewer female teen drivers (n=73) with hospitalizations than male teen drivers (n=114), the sum of the hospital charges was still higher for female teen drivers (\$6,416,334) than male teen drivers (\$5,705,689),
- For both teens and older drivers, the median length of stay for females was 4 days and for males, 3 days.

Types and Sites of Injuries for Hospitalized Persons

- The types of injuries reported varied somewhat for persons in a teen driven vehicle versus those in a car driven by an older person. Fractures were more frequent for those in the older driver group (46.9%) versus (38.5%) those in a teen driven vehicle. Internal organ injuries (24.3%) and open wounds (15%) were more frequent among those in a teen driven vehicle versus 20.4% and 8.4%, respectively, for those in an older driver vehicle.

