



U.S. Department
of Transportation

National Highway
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Administration



Research Note

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Rural and Urban Crashes -- A Comparative Analysis

NHTSA's National Center for Statistics and Analysis (NCSA) recently completed a study comparing the characteristics of crashes occurring in rural areas to the characteristics of crashes occurring in urban areas. The NCSA study examines the characteristics of rural crashes of all severities and contrasts key attributes with urban crashes of all severities.

Data from three sources were used to examine the similarities and differences in the characteristics of rural crashes vs. urban crashes. Comparisons of specific crash, driver/person, and vehicle characteristics for rural vs. urban crashes were studied in each of the three data sources. First, the study examines data from the Fatal Accident Reporting System (FARS) for the period 1975 - 1993 to compare the characteristics of rural fatal crashes to the characteristics of urban fatal crashes. For crashes of lower severity, data were used from three of the seventeen state files maintained by NCSA, Illinois, Pennsylvania, and New Mexico, for the period 1989 - 1993. These states were used in the study, as information on whether or not the crash occurred in a rural or urban area is recorded in the crash files. Finally, data from NHTSA's Crash Outcome Evaluation System (CODES) project were used to contrast safety belt use and medical costs for persons injured in rural crashes compared to those injured in urban crashes. The CODES project, based upon linked crash, medical, and cost data from the states of Hawaii, Maine, Missouri, New York,

Pennsylvania, Utah, and Wisconsin, was undertaken in response to Section 1031(b) of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.

For the comparisons of rural and urban fatal crashes from FARS, the study noted that while there are approximately 40% more fatal crashes and fatalities occurring in rural areas compared to urban areas; fewer vehicle miles traveled (VMT) occur in rural areas, resulting in higher fatality rates for rural areas for each year in the period studied. It was noted that rural fatal crashes compared to urban fatal crashes, have a larger proportion of crashes with:

- more than one fatality per crash;
- a truck involved;
- a vehicle rollover;
- severe vehicle damage;
- a head-on collision; and
- ejected persons.

In addition, the time for emergency medical services (EMS) to reach the fatal crash scene is longer in rural areas than in urban areas.

For the comparisons of rural and urban crashes of all severities using the state data from Illinois, Pennsylvania, and New Mexico, some similarities with the findings for rural fatal crashes were noted. Specifically, crashes in rural areas have a larger proportion involving:

- more than one person per vehicle;
- a single vehicle;
- a truck or van;

- a vehicle rollover;
- striking a fixed object;
- severe vehicle damage; and
- serious injury.

Using the CODES data, the safety belt use and medical costs of persons injured in rural crashes were compared to that for persons injured in urban crashes. Safety belt use was usually lower for hospitalized persons of rural crashes. The CODES data also indicated that crashes in rural areas are more severe: a person is as much as three times as likely to suffer a fatality, when involved in a

rural crash.

The study, *Rural and Urban Crashes -- A Comparative Analysis*, by Joseph M. Tessmer (DOT HS-808 450, August 1996) provides an extensive amount of information on these and other comparisons between the characteristics of rural and urban crashes. For a copy of the report, please contact NCSA, at (202) 366-4198 [fax (202) 366-7078] or the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield VA 22161, (703) 487-4650 [fax (703) 321-8547].