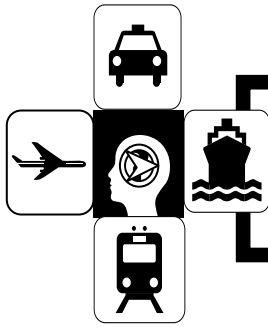


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Tech Brief

Analysis of Fatal Accidents in New Jersey

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Summary

In 2005 there were 691 fatal crashes and 748 fatalities in New Jersey. The data necessary to adequately understand fatal crashes are not readily available to New Jersey policy makers. The research program has developed a pilot system which links fatal crash data with other associated state data files. This research project has considered the following four databases: (1) New Jersey Crash Records, (2) the New Jersey Motor Vehicle Commission Fatal Accident Database, (3) Fatal Analysis Reporting System (FARS), and (4) the New Jersey State Police Fatal Investigations Division database. By linking these databases, there is an opportunity to investigate the root causes of fatalities in ways that are not possible through analysis of a single database. The project has used New Jersey fatal crash data to conduct two case studies, one on teen driver risk and one on elderly driver risk, to demonstrate the value of a comprehensive fatality data system.

Introduction

In 2005 there were 691 fatal crashes and 748 fatalities in New Jersey. Each of these tragic events occurred despite the millions of dollars expended by New Jersey each year on redesigned intersections, aggressive traffic law enforcement, driver education programs, EMS funding, and numerous other safety initiatives. Despite the success of these programs, the belief is that even greater fatality reductions are possible. If there were better data describing the driver-vehicle-road interactions which lead to fatal crashes, highway safety funds could be better targeted to reduce traffic fatalities.



Fatal accidents are complex events. Determining their root causes requires detailed data on driver behavior, vehicle performance, and roadway design.

Unfortunately, the data to adequately understand fatal crashes are simply not readily available to New Jersey policy makers. The encouraging fact is that New Jersey has extensive crash databases, exemplified by the New Jersey Crash Record system which contains summary records of over 300,000 police reported accidents each year. In addition, several state agencies in New Jersey maintain datasets which describe additional facets of the crash event. However, to date, for reasons ranging from privacy concerns to incompatible data formats, these datasets have been seldom linked for a comprehensive perspective of highway safety.

The research program has developed a pilot system which links fatal crash data with other associated state data files. By linking these databases, there is an opportunity to investigate the root causes of fatalities in ways that are not possible through analysis of a single database. This research project has considered the following four databases: (1) NJ Crash Records, (2) NJMVC Fatal Accident Database, (3) Fatal Analysis Reporting System (FARS), and (4) the NJ State Police Fatal Investigations Division database. The project has conducted two case studies to demonstrate the value of the linked data system.

Research Approach

Rowan University and Virginia Tech were contracted by the New Jersey Department of Transportation to study to determine the feasibility of an integrated database for the analysis of fatal accidents in New Jersey. The goal of this study was to determine the feasibility of an integrated database for the analysis of fatal accidents in New Jersey. The specific objectives are to 1) determine how New Jersey fatal accident datasets can be integrated and 2) demonstrate the value of this integrated database by the system in a series of pilot case studies

FINDINGS

The data from NJTR-1 Police Accident Report is supposed to be submitted to NJSP within 24 hours of the crash. This would allow the NJSP to initiate any action necessary if the perpetrator is still at-large. However, some information is sent to the NJMVC, NJDOT Office of Information Technology (OIT) and NJSP depending on the municipality. All the data is eventually stored in NJSP and checked for accuracy. The research team concluded that the NJSP database already serves as a comprehensive fatality database, and any further electronic linkage of data from different agencies would not be beneficial. The NJSP data could serve as a central database for fatal accidents.

In addition, the research showed that only a fraction of the data is received by the respective agencies in a timely fashion. Every effort should be made to send the data to NJSP, NMVC, and NJDOT within the stipulated time outlined in the Fatal Crash reporting protocol.

The project has used New Jersey fatal crash data to conduct two case studies, one on teen driver risk and one on elderly driver risk, to demonstrate the value of a linked data system. Following are our findings from these case studies:

Younger Driver Crash Fatality Risk

Approximately 100 younger persons (aged 15-20) die each year in New Jersey in traffic crashes. This project investigated the characteristics of these crashes and found the following:

- Most young persons killed in traffic fatalities were occupants of a passenger vehicle (82%) in 2003-2005. Pedestrians accounted for 9% of the fatalities while motorcycle riders accounted for 7% of the fatalities for persons 15-20 years old. Although most safety initiatives rightfully focus on teens and other young persons in their cars, it is important to keep in mind that nearly 1 in 5 of the fatally injured young persons is not an occupant of a car or light truck.
- For teens, two-thirds of the fatalities were male. This likely reflects the increased risk taking behavior which is characteristic of many male drivers.
- In 2006, New Jersey belt use rates were 90% - among the highest in the nation. Over half of all fatally injured younger persons were unbelted. Put another way 10% of vehicle occupants account for over half of the fatalities in New Jersey.
- Approximately 20% of younger drivers involved in fatal crashes had been drinking. Drinking is not permitted until age 21 in New Jersey.
- Over 70% of licensed younger drivers involved in fatal crashes had a full license, while over 20% had either a learner's permit or an intermediate GDL license. Lack of a license does not seem to be an issue for these younger drivers: 6% of all younger drivers involved in fatal crashes did not have a license. An additional, 8% of younger drivers involved in fatal crashes were driving on a suspended license.

Older Adult Crash Fatality Risk

In 2006, 134 older adults were fatally injured in traffic crashes in New Jersey. This project investigated the characteristics of these crashes and found the following:

- Older adults comprised less than 8% of all persons exposed to traffic crashes in New Jersey, but accounted for 20% of all New Jersey traffic crash fatalities per year. This underscores the fragility of older persons in traffic crashes.

- Most older adults killed in traffic fatalities were occupants of a passenger vehicle (67%). Fatally-injured older adults in motor vehicles were belted (64%). Surprisingly, more than 1 in 4 (27%) of all fatally-injured older adults were pedestrians.
- Alcohol use appears to be less a risk factor for older adult drivers than for young drivers. Only 6% of older adult drivers involved in fatal crashes had been drinking, as compared to 18% of younger drivers.
- Nearly 80% of fatal accidents involving older adult drivers in New Jersey occurred in daylight. This statistic suggests that older drivers may be choosing to avoid driving at night either because of self-regulation or because of licensing restrictions.
- Most fatal accidents involving older adult drivers in New Jersey (46%) occurred at an intersection. In contrast, both teen and adult drivers aged 21-64 were more likely to be involved in a fatal crash at non-intersections. Older drivers may have an elevated risk of intersection crashes because of a decreased ability to judge the amount of time necessary to clear an intersection.
- Older adult drivers who were involved in fatal crashes were 4.9 times more likely to have been ill or have blacked out than adult drivers aged 21-64. Older adult drivers were 10% more likely to have been drowsy or asleep than adult drivers and 40% more likely to have been inattentive or distracted than adult drivers.

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