

Using Linked EMS and Trauma Registry Datasets to Assess Outcomes Associated with Motor Vehicle Crashes Among Children Under Three, Texas, 2016

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INTRODUCTION:

The new Texas Office of Injury Prevention combined the state's EMS and Trauma Registries with the Safe Riders Traffic Safety Program. A priority is child motor vehicle injury surveillance and prevention. By linking vehicle crash data from the Texas Department of Transportation (TXDOT) with Registry data, epidemiologists can assess the use of age-appropriate restraints and summarize crash-related health outcomes.

OBJECTIVE:

1. To demonstrate value of linked crash to EMS and crash to Trauma data for program planning
2. To describe health outcomes (EMS transport and trauma injury severity) of children under the age of three involved in a traffic crash.
3. To assess differences in health outcomes by type of restraint.

METHODS:

The initial analysis was limited to children under the age of three involved in a car crash in Texas in 2016. Crash data were probabilistically linked to EMS and Trauma Registry data, creating two datasets used here. Passive surveillance is used for the Registries; EMS and Trauma events are potentially underreported. Because National Highway Traffic Safety Administration guidelines suggest rear-facing seats until age two given a child's size, this type of seat was considered the standard for restraint for this demographic.

RESULTS:

In 2016, there were 35,600 children under the age of three involved in a crash reported to TXDOT by investigating police officers (2.4% of all persons in a crash). Of these, 16,694 (47%) were restrained in a forward- and 11,814 (33%) in a rear-facing child seat. Of the 853 children in a crash where EMS responded, 504 (59%) were transported. Three-hundred eighty-five (45%) were restrained in a forward- and 330 (39%) in a rear-facing child seat. Of the 204 children in a crash with a linked trauma record, 20 (10%) had a severe injury (an ISS >15). Eighty-three (41%) were

restrained in a forward- and 52 (26%) in a rear-facing child seat. There were no significant differences in EMS transports or traumatic injury severity between children under three in a child seat compared to other types of restraints, like a seatbelt; however, most crash records were not linked with a Registry event.

CONCLUSION:

Analysis with linked data can inform program planning. While significant results were not seen here, additional questions can be framed with input from partners and stakeholders. Research questions will be expanded to improve reporting and linking and analyzed additional demographics, sub-state geographies, and other outcomes.

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