Linking Crash and Emergency Medical Services/Trauma Data through a UUID

To comprehensively understand the intricate relationship between safety, health, and equity, Texas has been linking crash data with injury records from the EMS and Trauma Registries over the last five years using probabilistic methods that are time intensive and may result in incorrect or unmatched data.

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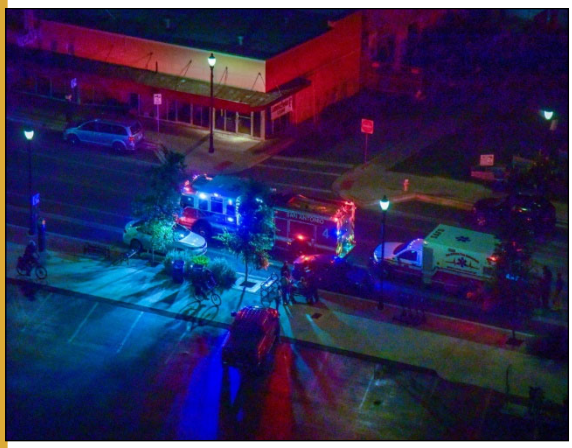
Project Need and Approach

In 2021, approximately every two minutes someone was seriously injured and every two hours someone died in a crash in Texas. Most of these individuals, plus many that sustained lesser injuries, required medical interventions performed by emergency medical services (EMS) and trauma professionals. To comprehensively understand the intricate relationship between safety, health, and equity, Texas has been linking crash data with injury records from the EMS and Trauma Registries over the last five years using probabilistic methods. While probabilistic linking has been largely effective in this application, this method is time intensive, and the lack of unique keys leaves room for error (i.e., incorrect or unmatched data) in the linking process. An alternative to probabilistic linking is to employ deterministic methods that link data based on a unique identifier.

In March 2023, when the Texas Department of State Health Services (DSHS) rolled out version 3.5.0 of the National EMS Information System, the Patient Care Report and each data item within the EMS and Trauma Registries now has an unchanging universally unique identifier (UUID) assigned. Texas can be an early adopter of linking crash records with the EMS and Trauma Registries using the UUID. This deterministic linking process will allow Texas to improve the timeliness, accuracy, completeness, uniformity, integration, and accessibility of the linked EMS and Trauma Registries and crash database.

This project will pilot integrating a UUID into crash records to enable deterministic linking of crash data with EMS and trauma records in Texas, improving both data accuracy and timeliness.



Project Activities

This project will pilot linking Texas crash data with EMS and trauma records by incorporating the UUID into crash reports on scene. The UUID, created by EMS dispatch, will be shared by EMS personnel with law enforcement officers (LEOs) completing crash reports. This approach will be tested in EMS Regional Advisory Council (RAC) A&B, which covers Amarillo, Lubbock, and the surrounding areas. A team including personnel from the Texas A&M Transportation Institute (TTI), the Texas Department of Transportation, the EMS RAC A&B, EMS agencies, and law enforcement agencies will oversee the pilot. EMS personnel and LEOs will be trained to integrate the UUID into crash narratives using the UUID prefix; TTI researchers will extract the UUID and create a dedicated variable in crash records for the EMS RAC A&B. These data will then be shared with the Texas DSHS for potential deterministic linking with EMS and trauma records, beyond the project scope.

The pilot's feasibility for statewide implementation will be evaluated. Regular monitoring of process and outcome indicators will ensure early identification of issues and allow for adjustments or retraining as needed. Feedback will be collected from local EMS providers, LEOs, EMS RAC A&B members, and other stakeholders through surveys and interviews. Findings from this pilot and an analysis of other states' efforts to link crash and EMS/trauma data using UUIDs or similar identifiers will inform recommendations for future linking efforts in Texas.

Benefits to Texas Transportation Safety

Increasing the quantity and quality of linked Texas crash data, along with insights from other states' use of a UUID, will help the Center for Transportation Safety reduce the severity of roadway crashes. The deterministically linked data from this project's pilot phase will provide better insights into EMS response times, medical services provided, and crash-related medical outcomes. Lessons from other states will help Texas explore further integration of the UUID. These efforts support the Center's commitment to interdisciplinary collaboration in transportation safety and contribute to assessing the effectiveness of programs aimed at reducing transportation-related injuries and fatalities.

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For More Information

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