4. Vehicle and driver data linked to crash data

Benefits:

- Law enforcement can verify in-state registered vehicles and drivers in real-time.

- Vehicle and driver records can be updated with crash and citation information close to real-time.

- Linkages of driver and crash records helps target educational campaigns against drunk driving and seat belt non-compliance at the correct demographic groups.

Sample Performance Measures:

- The percentage of in-State registered vehicles on the State crash file with Vehicle Identification Number (VIN) matched to the State vehicle registration file.

- The number of days between the date of a critical status change in the vehicle or driver record to the date the change is entered into the database.

5. Crash data linked to EMS/ injury surveillance data

Benefits:

- Linked crash and EMS/injury surveillance records provide more accurate and complete injury data.

- EMS and injury surveillance agencies have access to traffic crash data that gives them better understanding of the contributing circumstances surrounding injuries.

- Linked crash and EMS/injury surveillance data give more accurate crash location and time data that lets EMS improve response times that increase through the "golden hour."

Sample Performance Measures:

- The percentage of crash-related hospital records that link to the actual crash data associated with the injuries.

- The increase in EMS crash-related record completeness and accuracy resulting from crash and EMS record integration.

The STRATEGY

Strategies for a data-driven model of information sharing have key tactics for all traffic safety partners, including:

1. Identifying outcomes for reducing crashes, injuries, and aggressive or impaired driving;

2. Coordinating stakeholders to achieve traffic safety goals;

3. Monitoring and assessing data for effective application of countermeasures;

4. Sharing outcomes for data-driven, place-based operations through standardized pre- and post-treatment evaluations;

5. Promoting strategic communications for sharing outcomes achieved by information networking; and

6. Incorporating "the Four E's" (enforcement, engineering, education, and EMS) into a viable traffic safety approach.

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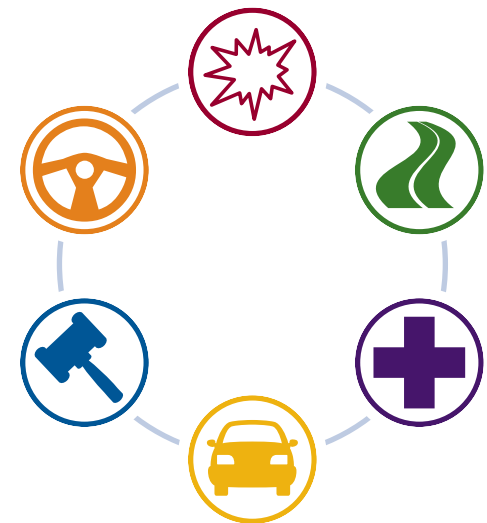
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Linking Traffic Records Data Systems

National Highway Traffic Safety Administration

The VISION

- Encouraging highway safety partners to pursue traffic records system linkages to help reduce traffic crashes and social harm.

- Increasing the sharing of linked information to support a data-driven approach to traffic safety. Linked data can be a rich resource for developing and measuring progress of a State's Highway Safety Plan, as well as for research use by safety agencies and stakeholders.

- Expanding the benefits of linking databases beyond traffic safety. For example, reducing data entry minimizes entry errors and may reduce welfare and healthcare fraud, thus saving money through fraud prevention rather than fraud investigation.

The CHALLENGE

The first step in determining what data elements are best suited for linkage is to develop a traffic records inventory. Documenting these elements and their database structure allow easier and cleaner integration when systems are built and upgraded. To create a traffic records inventory, the following questions should be considered:

- *Why* is data linkage important and why should each stakeholder participate?

- *Who* can release linked data and under what circumstances?

- *What* do the stakeholders need, and what data can they provide?

- *Does* the stakeholder have the technology to participate in data linkage, and when will they use it?

- *Where* will the linkage repositories be held?

- *How* do we get stakeholder participation, and how will they benefit from data linkage?

The RESOURCES

Bridging these questions begins with understanding the mutually beneficial nature of data linkages.

System upgrades and project planning require inventory resources. Integration of all data sources, system custodians, data elements and attributes, and linkage variables ultimately create the seamless linkages useful for improving data accessibility.

This bridge-building rests on six core traffic records data systems: Crash, Vehicle, Driver, Roadway, Citation/Adjudication, and EMS/Injury Surveillance. They use six performance attributes: Timeliness, Accuracy, Completeness, Uniformity, Integration, and Accessibility. To review a complete list of NHTSA's recommended traffic records performance measures, see Model Performance Measures for State Traffic Records Systems (NHTSA, 2011).

The APPLICATIONS:

Examples of possible linkage applications:

1. Crash data linked to citation/ adjudication data

Benefits:

- Ensures that high-visibility law enforcement is conducted in areas targeted for most frequent and serious injury crashes and traffic citations, reducing costs and putting resources where they are most effective. Evaluating the success of the countermeasures is applied over time.

- Court records updated with the latest crash and citation data uploaded from law enforcement in near real-time; in turn, law enforcement records are updated with the most current adjudications.

- DUI offenders can be tracked all the way from arrest to adjudication. Repeat offenders can be identified. DMVs can ensure reinstatement follows compliance with court-ordered sanctions. Education and therapy programs can be evaluated for success. Prevention programs like

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ignition interlocks can be conducted. (See NHTSA's Model Impaired Driving Records Information Systems – MIDRIS, Greer, 2011).

Sample Performance Measures:

Performance measurement should be specific to the linked data. For example, linked citation and crash data allows targeted enforcement, which should reduce the number of crashes the data targeted:

- Percentage of reduction in speed-related crashes in 90 days following targeted enforcement;

- The median or mean number of days from the crash date to the date the crash report is entered into the database;

- The percentage of citation records with no errors in critical data elements.

2. Driver data linked to EMS/statewide injury surveillance data

Benefit:

- Linking driver data to injuries resulting from crashes lets DMVs determine effectiveness of their administrative authority and duty to grant, suspend, and revoke driving privileges.

3. Roadway data linked to crash data

Benefits:

- Traffic planners and roadway engineers have access to the trafficways with the most frequent and serious injury crashes and traffic citations, and therefore can use resources most effectively.

- Law enforcement has access to roadway inventory, GIS data, and vehicle miles traveled (VMT) per trafficway, and can therefore plan location-based enforcement strategies.

Sample Performance Measures:

- The percentage of roadway that includes GPS coordinates for GIS mapping.

- The number of MMUCC-compliant (NHTSA, 2012) data elements entered into the crash database or obtained via linkage to other databases.