I-95 Corridor-wide safety data analysis and identification of existing successful safety programs

Traffic Injury Research Foundation
April 22, 2010
Overview

- Background
- Methodology
- Purpose
- Crash analysis
- Program survey
- Timelines
Background

- Multiple factors contribute to motor vehicle crashes.
- Jurisdictions have multiple competing priorities and limited resources to address these priorities.
- Need to prioritize interventions and solutions to maximize the effectiveness of programs and policies.
- Need evidence-based approach to target interventions.
Background

- **Purpose of the Safety Data Analysis:**
  - to identify the primary causes of fatal and serious injury crashes; and,
  - to provide an inventory of effective traffic safety programs that can be implemented across the I-95 Corridor.

- **Goal is to improve safety for the motoring public.**

- **Objective is to produce a set of best practices for dealing effectively with the major causes of fatal and serious injury crashes that occur on the roads.**
Methodology

- Characteristics of fatal and serious injury crashes
  - FARS analyses
  - Jurisdictional crash data analyses

- Inventory of effective traffic safety programs
  - Program survey

- Best practice recommendations
  - Webinar
Purpose

➢ To come up with a set of best practices for dealing with crash characteristics identified in the analyses.

➢ The project’s preliminary findings will be presented.

➢ We invite you to discuss these findings and provide input into the development of recommendations based on the study findings.
Crash analysis

- **FARS analyses (fatal collisions)**
  - Five regions
  - New England (ME, NH, VT, **MA**, CT, RI)
  - North (NY, NJ, **PA**)
  - Central (DE, MD, DC, **VA**)
  - South (NC, SC, **GA**)
  - Florida (**FL**)

- **State data analyses (fatal and serious injury collisions)**
  - One state from each region
  - GA, PA, VA, FL, and MA
Crash analysis

Type of collision

- Single vehicle crashes were common (39%)
- Many involved angle impacts (24%)
- Rollovers were frequent (9%)
- Hitting a fixed object was common (39%)
- The majority involved frontal impacts (62%)
Crash analysis

- **Driver characteristics**
  - Drivers were frequently aged 21-34 (31%)
  - The majority were male (74%)
  - Negotiating a curve was common (14%)
  - Most used no avoidance maneuver (57%)
  - Many involved unbelted driver (30%)
  - Drinking drivers were common (19%)
  - Drug use was frequent (10%)
  - Many drivers were speeding (20%)
  - Many were improperly licensed (12%)
Crash analysis

Road and vehicle characteristics

- The majority occurred on 1-2 lane roads (79%)
- Most were also on undivided roads (64%)
- Many were located on the roadside (33%)
- Most were on principal or minor arterials (58%)
- Most occurred in a rural area (54%)
- Many crashes were on curved roads (33%)
- Many also occurred at an intersection (29%)
- Late model vehicles (2004+) were common (21%)
Crash analysis

- Temporal and environmental characteristics
  - Half of the collisions occurred Friday to Sunday (51%)
  - Night-time collisions were common (36%)
  - Many crashes occurred on weekends (42%)
  - Many crashes also occurred when it was dark (44%)
Crash analysis

In summary...

- Most fatal and serious injury collisions involved a single vehicle, frontal impact, running off the road and hitting a fixed object.
- Drivers tended to be male, aged 16-34, unbelted, speeding, using no avoidance maneuvers, and under the influence of alcohol or drugs.
- These collisions occurred on one or two lane rural roads that were undivided, many with a curve.
- Collisions most often occurred on weekends, at night with dark lighting conditions.
Program survey
(I-95 Jurisdictions)

- **Impaired driving**
  - Alcohol enforcement initiatives (FL’s high visibility sustained DWI enforcement, NY’s STOP-DWI and Last Drink Program)

- **Speeding**
  - Speed cameras (FL, MD, DC)
  - Speed campaigns (DE)
  - Targeted speed enforcement (FL)
Program survey
(I-95 Jurisdictions)

- **Fatigued driving**
  - Education – drowsy/fatigued driving (NY’s NYPDD)
  - Drowsy driving law (NJ)

- **Seat belt usage**
  - Primary seat belt laws
  - Demerit points (DC)
  - Education (FL’s Street Smart)
  - Targeted media – seat belts (MD, NJ)
Program survey
(I-95 Jurisdictions)

- Improperly licensed drivers
  - License plate recognition (CT, NY, VA)
- Collision avoidance
  - Driver education (CT, NY, NJ, ME)
- Road engineering
  - Paved shoulders
  - Roundabouts
  - Increased friction pavement
Program survey
(Jurisdictions outside the I-95 Corridor)

- Impaired driving
  - Targeted DWI enforcement (MI and MN)
  - Road safety campaigns (Great Britain’s Think!)

- Speeding
  - Targeted speeding enforcement (SK’s speed trailers and Great Britain’s SPECS cameras)
Program survey
(Jurisdictions outside the I-95 Corridor)

- Fatigued driving
  - Fatigued driving enforcement (MN)
  - Laws (MI, IL, OR)

- Seat belt usage
  - Safety belt enforcement guidelines (MI)
  - Enforcement blitz (AB)
Program survey
(Jurisdictions outside the I-95 Corridor)

- Improperly licensed drivers
  - Facial scanning biometrics (CA)
- Collision avoidance
  - Driver education (AZ, SK, AB, ON)
- Road engineering
  - Transverse rumble strips (BC)
  - Upgraded sign materials (BC)
  - Colored pavement markings (BC)
  - Self explaining roads (Germany)
Program survey

- Program evaluations

- Many evaluations could not be located or were not accessible.
- Few evaluations were peer reviewed.
- Many involved process evaluations which examined the delivery of the programs, but not the outcomes of the programs.
Next steps

- We invite you to discuss these findings and provide input into the development of recommendations based on the study findings.

- End goal is a set of best practices for dealing with crash characteristics identified in the analyses.

- Please send us any additional comments via email within two weeks of the webinar.
  - May 6, 2010
Staying informed

www.tirf.ca

http://www.i95coalition.org
I-95 Ten Percenters

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Overview

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Background

- High-risk drivers (HRDs) are often described as a relatively small group of persistent traffic violators (usually less than 10%).

- It is believed that these persistent offenders are responsible for a significant portion of the serious injury and fatal collisions on the highways.

- The high risk driver problem has not, until recently, received much attention.

- Data on the dimensions of the problem are limited.
Purpose of the Ten Percenter project:
- To identify the magnitude and characteristics of the high-risk driver (HRD) problem: and,
- To provide an inventory of effective traffic safety programs that can be implemented across the I-95 Corridor.

Goal is to address the problem of the ten percenters or HRDs to improve the safety for the traveling public.

Objective is to produce a set of best practices for dealing effectively with these offenders.
Methodology

- **Magnitude and characteristics of HRDs**
  - FARS analyses
  - FARS analyses with multiple imputation data
  - Driver record data analyses

- **Inventory of effective traffic safety programs**
  - Program survey

- **Best practice recommendations**
  - Webinar
Purpose

- The project’s preliminary findings will be presented.

- We invite you to share your perspective and experiences in relation to the findings and ask questions.

- This discussion and input will inform the development of best practices for dealing with ten percenters.
Crash analysis

- **FARS analyses**
  - 3 or more of the following in the last 3 years
    - impaired driving offense
    - speed violation
    - other violation
    - collision
    - license suspension

- **FARS analyses with multiple imputation data**
  - Same as above plus BAC (0.16% and higher, or refused breath test)

- **State driver record analyses (FL, VA, GA)**
  - 3 or more of the following in the last 3 years
    - traffic convictions, charges or citations
Crash analysis using FARS

- In total, approximately 14% of drivers involved in fatal collisions were considered to be HRDs.

- The percentage ranged from a low of 3% in DC to a high of 19% in NJ.
Multiple imputation crash analyses using FARS

- In total, approximately 25% of drivers involved in fatal collisions were considered to be HRDs.

- The percentage ranged from a low of 15% in DC to a high of 33% in CT.

- The differences between HRDs and non-HRDs are more pronounced when using multiple imputation data.
Crash analysis

- HRDs were more commonly involved in single vehicle collisions where the vehicle ran off the road and hit a fixed object.
- Drivers in these collisions tended to be male, aged 21-34, unbelted, speeding, under the influence of alcohol or drugs, and were likely to have an invalid license.
- Collisions most often occurred on weekends, at night, and when it was dark.
- HRDs represent a small proportion of drivers but account for a very substantial portion of fatal injury collisions.
State driver record analyses

- Percentage of HRDs
  - FL (7%)
  - GA (1%)
  - VA (0.25%)

- The percentage of HRDs is smaller when examining all licensed drivers, whether involved in a crash or not, than the percentage involved in fatal crashes alone.
Program survey
(I-95 Jurisdictions)

- High-risk impaired drivers
  - Laws and enforcement
    - License revocations (FL’s Operation Round-UP)
    - Enforcement campaigns (ME – NHTSA’s Buzzed Driving in Drunk Driving)
    - Saturation patrols (NY)
    - High-visibility enforcement and heightened public awareness (RI’s You Drink & Drive, You Lose)
Program survey
(I-95 Jurisdictions)

- High-risk impaired drivers
  - Educational programs
    - Level II DWI course (FL)
    - Education, assessment and treatment programs (NY and ME’s DEEP)
  - Resource centers (NJ)
- Rehabilitation programs
  - Individualized content (DE)
  - Multiple phase treatment (MA)
  - Others (NH, NY, SC)
Program survey
(I-95 Jurisdictions)

- **High-risk other drivers**
  - Laws and enforcement
    - Legal definition of a HRD (FL, GA, ME, MD, NJ, VA)
    - Targeted campaigns (GA, NY)
    - Special enforcement units (NH)
    - Monitoring (NJ)
    - Targeted enforcement (PA)
Program survey
(I-95 Jurisdictions)

- High-risk other drivers
  - Defensive driving courses
    - Driving habits (FL)
    - Defensive driving awareness/abilities (ME)
    - Young drivers (MA)
  - Driver retraining courses
    - Behavioral (MA, NY, NJ)
    - Rehabilitation (VA)
Program survey (Jurisdictions outside the I-95 Corridor)

- High-risk impaired drivers
  - Laws and enforcement
    - Targeted enforcement (MN, NS, SK)
    - Year-long enforcement (ON)
  - Educational programs
    - Portion of rehab program (SK)
  - Rehabilitation programs
    - SK, ON
Program survey
(Jurisdictions outside the I-95 Corridor)

- **High-risk other drivers**
  - Laws and enforcement
    - Enforcement and media campaign (AZ)
    - Electronic enforcement (CA)
    - Monetary assessments (MI)
    - Campaigns (OR)
    - Targeted education and enforcement (ON)
    - Automatic license recognition (Victoria)
Program survey
(Jurisdictions outside the I-95 Corridor)

- High-risk other drivers
  - Defensive driving courses
    - HRD-specific (BC, NWT)
    - Driver improvement (MB)
    - Driver improvement counselors (ON)
    - Driving theory and practical skills (UK)
    - Behavioral (Victoria)
  - Driver retraining courses
    - Behavioral (AZ, CA, OH, OR)
Program survey

- Program evaluations
  - Some evaluations are still ongoing.
  - Many evaluations could not be located or were not accessible.
  - Few evaluations were peer reviewed.
  - Many involved process evaluations which examined the delivery of the programs, but not the outcomes of the programs.
Next steps

- We invite you to discuss these findings and provide input into the development of recommendations based on the study findings.

- End goal is a set of best practices for dealing with ten percenters, or HRDs that jurisdictions can use to strengthen existing practices.

- Please send us any additional comments via email within two weeks of the webinar.

- May 6, 2010
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