Michigan TACT
Program and Evaluation

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UMTRI Research Team

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Background

■ **TACT Program** –
  - High visibility enforcement and PI&E program
  - Funded (in part) through grants from Federal Motor Carrier Safety Administration (FMCSA)

■ **OBJECTIVE** - decrease traffic deaths and injuries from large truck/car crashes
  - Make general driving public more aware of the safe ways to interact with large vehicles
  - Give large trucks more room and maneuverability.

■ **Pilot program** – Washington State -2004 – Successful

■ **FMCSA** encouraged more States to implement TACT programs
Large Truck Crash Involvements in Michigan decreasing

But, there is room for improvement

TACT Program

Large Truck Involvements in Michigan by Crash Severity, 2001-2011*

* Source: Blower and Kostyniuk, Strategies to Reduce CMV-Involved Crashes, Fatalities, and Injuries in Michigan: 2013 Update
MI OHSP receives grant for TACT implementation program from FMCSA in FY2013 – UMTRI to conduct the evaluation portion

Michigan OHSP TACT Planning Grant from FMCSA - FY 2012

OHSP Grant to UMTRI to assist in developing TACT implementation grant application to FMCSA - Involves crash analysis to identify TACT program locations, evaluation design

Evaluation

- Process evaluation - How was the program conducted?
- Program outcome evaluation - What did the program accomplish?

Michigan TACT Program
Enforcement on TACT corridors
Media and public outreach campaigns
Selecting TACT Program and Comparison Sites

- UMTRI reviewed previous TACT programs (reports, interviews)

- UMTRI selected a study design - before/after comparisons at TACT program sites and similar sites with no TACT program

- Examined locations of two-vehicle crashes in Michigan 2006-2010 of trucks and cars that involved aggressive action of either driver
Selecting TACT Program and Comparison Sites

Selected 2 pairs of corridors based on comparisons of:

- Road type
- Crash rate
- Traffic volumes
- % Large truck traffic
- Large truck volume
- Location in state
MI TACT Program

- **3 Waves -** Oct 7-18, Nov 4-15, Dec 2-13

- **High Visibility Enforcement on TACT Corridors**
  - M-F, 7 am – 7 pm
  - 6 law enforcement agencies (Michigan State Police, Kent County Sheriff, Ottawa County Sheriff, Grand Rapids, Walker, and Wyoming Police Departments)
  - Targeting – passenger vehicles and trucks
    - Improper lane use, careless and reckless driving,
    - Following too closely, failure to yield right of way.

- **Media and PI&E Campaigns**
Enforcement Results

- Enforcement hours: 2,061
- Stopped nearly 3,000 vehicles
- Issued over 2,500 citations –
  - mostly speeding and following too closely
- Approximately 14% of cited were commercial motor vehicle drivers.
Media and PI&E Events

Press conference kick-off, interviews reporter ride-alongs
Billboards, Public Event at Walmart, TV news stories, reporter ride-alongs, interviews, radio spots, newspapers
Evaluation

- Process Evaluation
- Program Evaluation

Design - Before/After with Comparisons

What changed in TACT sites after program in comparison to similar sites where TACT was not implemented?

- Changes in Knowledge & Awareness
- Changes in Unsafe Driving Behaviors
- Changes in Truck/Car Crashes
Process Evaluation

- How was the program conducted?
  - **Enforcement** - A record of all activities related to TACT enforcement effort, including dates, location, agencies involved, levels of effort, etc.
  - Structured in-person interviews with police agencies
  - **Communications** – A record of all activities/outcomes of TACT-related communications effort, including dates, venues, media mode, level of effort, etc.
- UMTRI received OHSP records of the TACT enforcement, communications and outreach activities
- STATUS - tallying the counts, finishing interviews, developing report
Program Outcome Evaluation-1

Changes in Knowledge and Awareness

Method: Before and After Surveys

- Driver population: Telephone survey – random sample of drivers in program and comparison areas
- Truck drivers: Paper/pencil questionnaires at trucking firms

Analysis: statistical survey analysis methods

Status: all survey data collection completed, analyses not completed.
Status – all survey data collection completed.

analyses- not completed.

Truck driver survey responses
184 before, 132 after

General public survey responses
404 before, 402 after
Changes in Unsafe Driving Behaviors

Method - Observational study of selected driving behavior -- passing and merging maneuvers near large trucks

- On TACT and Comparison corridors
- Before TACT – September 2013
- After TACT – January 2014 → (Feb, March)

Protocols
- UMTRI observer rides in large truck
- Identify, classify maneuver (safe, unsafe, maybe unsafe)

Analysis – statistical comparative analysis

Status – data collection completed, initial tabulations of data completed
Observer Training

Two UMTRI observers rode along with MI State police from Niles Post to get familiar with police procedures (what do police see, when do they stop/ticket vehicle?)

Observers tested protocols in UMTRI trucks (from Connected Vehicle project) along comparison corridor in August 2013

Achieved high inter-observer reliability
TACT Program Corridors

TACT Comparison Corridors
Observations

Each site (TACT 1&2, Comparison 3&4)
Two 8-hr days of observations in each study period.

Observers alternated – so each observer was at each of the 4 sites once in each study period September observation schedule

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Second set of observations (after completion of TACT program) scheduled for week of January 6.
Observation dates

**FEBRUARY 2014**

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# Comparison of Lane Change Maneuver

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<tr>
<th>Corridor</th>
<th>Time Period</th>
<th>Number and classification of lane change maneuvers</th>
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<tr>
<td></td>
<td></td>
<td>All</td>
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<tr>
<td>TACT</td>
<td>Before</td>
<td>1199</td>
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<td>After</td>
<td>1004</td>
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<td>Comparison</td>
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<td>After</td>
<td>665</td>
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**Safe lane change**
TACT sites 97% → 95%
Comparison sites 91% → 94%

**Used signal in lane change**
TACT sites 57% → 60%
Comparison sites 62% → 70%
## Comparison of Merge Maneuver

<table>
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<th>Corridor</th>
<th>Time Period</th>
<th>Number and classification of merge maneuvers</th>
<th>All</th>
<th>Safe</th>
<th>Unsafe/Maybe</th>
<th>Using Signal</th>
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<tbody>
<tr>
<td><strong>TACT</strong></td>
<td>Before</td>
<td>203 (100%)</td>
<td>184 (91%)</td>
<td>19 (9%)</td>
<td>146 (72%)</td>
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<td>After</td>
<td>132 (100%)</td>
<td>116 (88%)</td>
<td>16 (12%)</td>
<td>95 (72%)</td>
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<tr>
<td><strong>Comparison</strong></td>
<td>Before</td>
<td>97 (100%)</td>
<td>85 (88%)</td>
<td>12 (12%)</td>
<td>48 (49%)</td>
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<td>After</td>
<td>69 (100%)</td>
<td>66 (95%)</td>
<td>3 (4%)</td>
<td>35 (51%)</td>
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- **Safe Merge**
  - TACT sites: 91% → 88%
  - Comparison sites: 88% → 95%

- **Used signal in merge**
  - TACT sites: 72% → 72%
  - Comparison sites: 49% → 51%
Program Outcome Evaluation- 3

- Changes in Truck/Car Crashes
  
  **Data**
  
  - Michigan crash data
  - Program and Comparison corridors
  - Monthly crash data through 6 months after TACT program

  **Analysis** – Statistical comparison using time series models

  **Present Status** - adding current monthly crash records to analyze data files of all crashes and CMV-involved crashes - for state and on TACT and comparison corridors.
Our “Still to Do” List
(mostly - complete analyses and write report)

- Complete analysis of telephone survey data
- Complete analysis of pencil/paper truck driver survey
- Finish interviews with law enforcement
- Complete analysis of observational data of passing and merging behavior
- Conduct crash data analysis
- Document the study
- Final Report due date – Sept 30, 2014
Thank you!

Questions?