FMCSA State Data Quality Programs

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Analysis, Research and Technology

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ART Forum

FMCSA State Data Quality Programs

Background

♦ Data Quality – FMCSA – Priority

♦ TEA -21

♦ SAFETEA-LU

Data Quality Program

- ◆ DQ Evaluation and Monitoring
  - State Safety Data Quality (SSDQ)
  - State Crash Data Analysis

- ◆ DQ Improvement
  - State Reviews
  - Technical Assistance
  - Analysis and Improvement of State Police Accident Reporting (PAR)
  - Training
  - Funding

- ◆ Data Correction
 - DataQs
  - FARS/MCMIS Matching Tool

Data Quality Program

EVALUATION AND MONITORING

DATA IMPROVEMENT

DATA CORRECTION
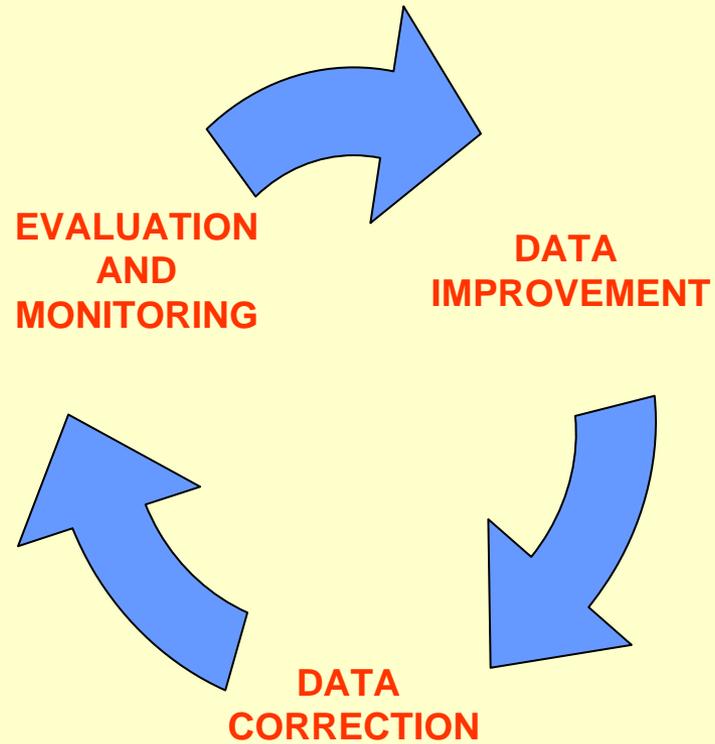
DQ Evaluation
State Safety Data Quality (SSDQ)

♦ 7 performance measures:

- Completeness – Fatal crashes; Non-fatal crashes; Record

- Timeliness – Crash & Inspection uploads;

- Accuracy – Match of Carrier crash and inspection data to FMCSA Census file
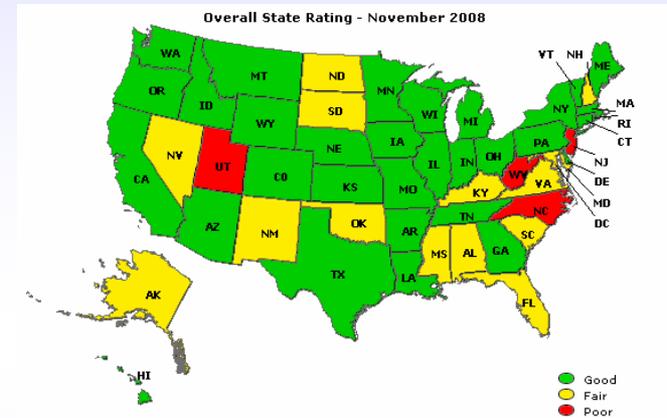
♦ 1 overriding indicator

♦ Monthly evaluation updates

♦ Historical perspective

Overall State Rating - November 2008

Good / Fair / Poor

Missouri: Crash Timeliness Measure
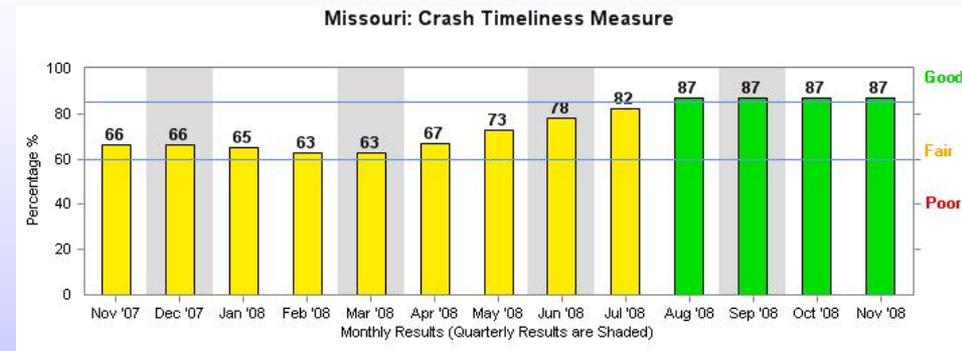
DQ Evaluation

Impact...State Safety Data Quality Evaluation

SSDQ Implemented → **3-yr Improvement** → **New Measures**
(March 2004)   (June 2007)   (September 2007)

Overall State Rating - August 2007

Overall State Rating - September 2007
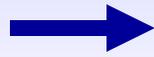
	Mar 2004	Jun 2007	Sep 2007	Jan 2009
Good	24	38	27	32
Fair	13	10	16	14
Poor	14	3	8	5

16-month Improvement
(January 2009)

Overall State Rating - November 2008
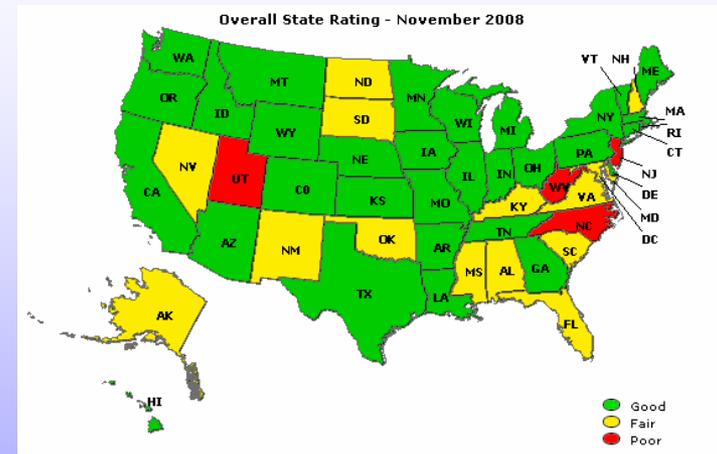
DQ Evaluation
State Crash Data Analysis

♦ Evaluation of State Crash Reporting

♦ Reports available online

♦ Ratio of Crash Severity Analysis (fatal to non-fatal crashes)

EVALUATION OF IOWA CRASH DATA REPORTED TO MCMIS CRASH FILE

DANIEL BLOWER
ANNE MATTESON
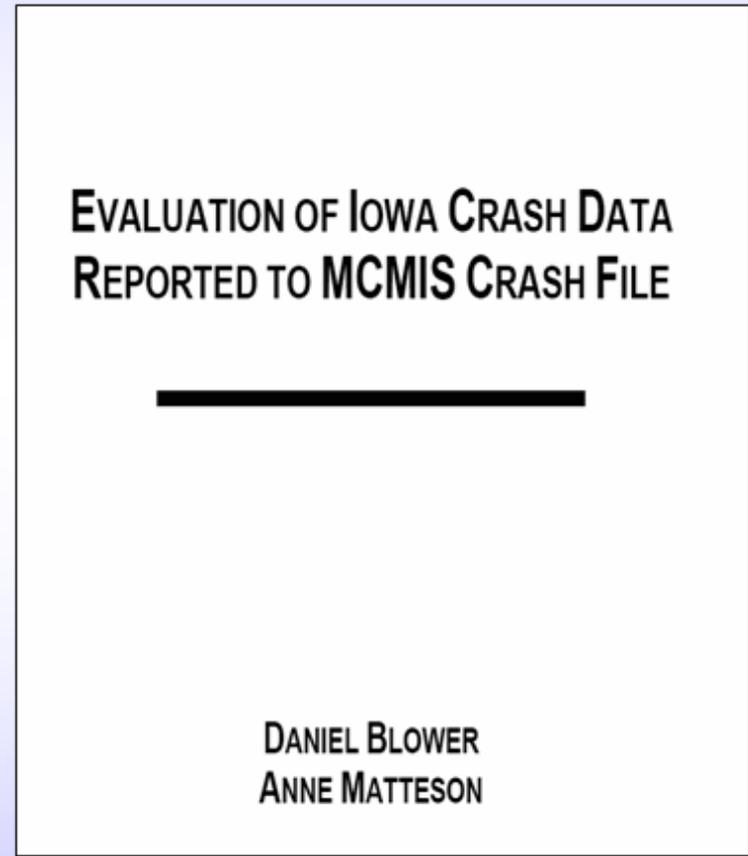
28 States
SC, ME, KY, ID, GA, CT, AL, IN, PA, AZ,TN, SD, WI, CA
NE, LA, OH, MO, IA, MD, WA, IL, NC, NJ, FL, MI, AR, SC

DQ Evaluation
State Crash Data Analysis

Ratio of Crash Severity Analysis
Using Fatal to Predict Non-fatal Crashes

♦ State Data with dependable reporting of fatal and non-fatal crashes to estimate the non-fatal crashes in States that do not necessarily use our selection criteria

♦ 90% Prediction Interval

♦ Log-linear Regression

♦ 13 Data Points using 11 States

The State Review Process

Month 1	Month 2	Month 3
Define the Data Collection Process	Identify Bottlenecks & Constraints	Submit Recommendations

Data Improvements
State Reviews

◆ Recommendation Categories

- Crash Form Improvements
- Electronic Collection at the Scene
- Extract Logic/Coding
- Criteria Applied for Hand-Selecting Crashes
- Tracking Reports Throughout the Process
- SAFETYNET Practices
- Empty Fields Research
- Organizational Coordination

Comprehensive—NH, NC, PA, NJ, IL TN, LA, IN, MA, NM, MD, WI, OH*
Focus—SC, MS*
2009—WV, CA, UT, TX, AL

Data Improvements
Technical Assistance

♦ Monitor SSDQ Evaluation Reports

- Review SSDQ Measures for improvement

- Create/Analyze Custom Crash & Inspection Analysis Reports

- Provide Information/Training to help improve SSDQ

- Facilitate solutions to identified data quality improvement areas
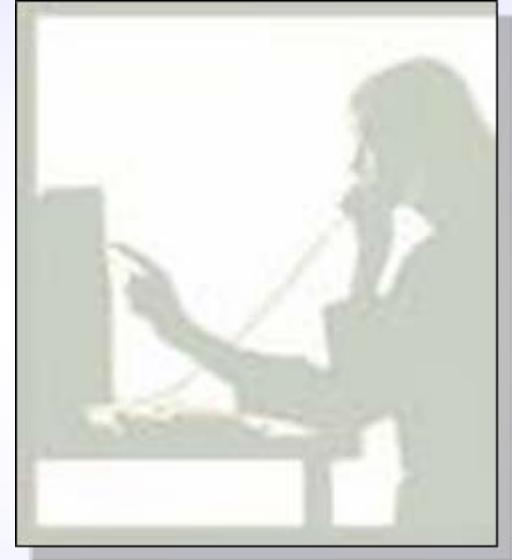
Data Improvements
Analysis and Improvement of State Police Accident Reports and Training

- ◆ On-site & Online

- ◆ Extraction Logic

Data Improvements Funding

♦ Safety Data Improvement Program (SaDIP) Grant Funding

- 42 States
- $32,000,000
- 2009 – $3 Million
- January 30, 2009
- Grants.gov
- CFDA – 20.234

DQ Evaluation
Impact...Comprehensive Data Quality Program

State Reported Large Trucks Involved in Fatal and Non-Fatal Crashes
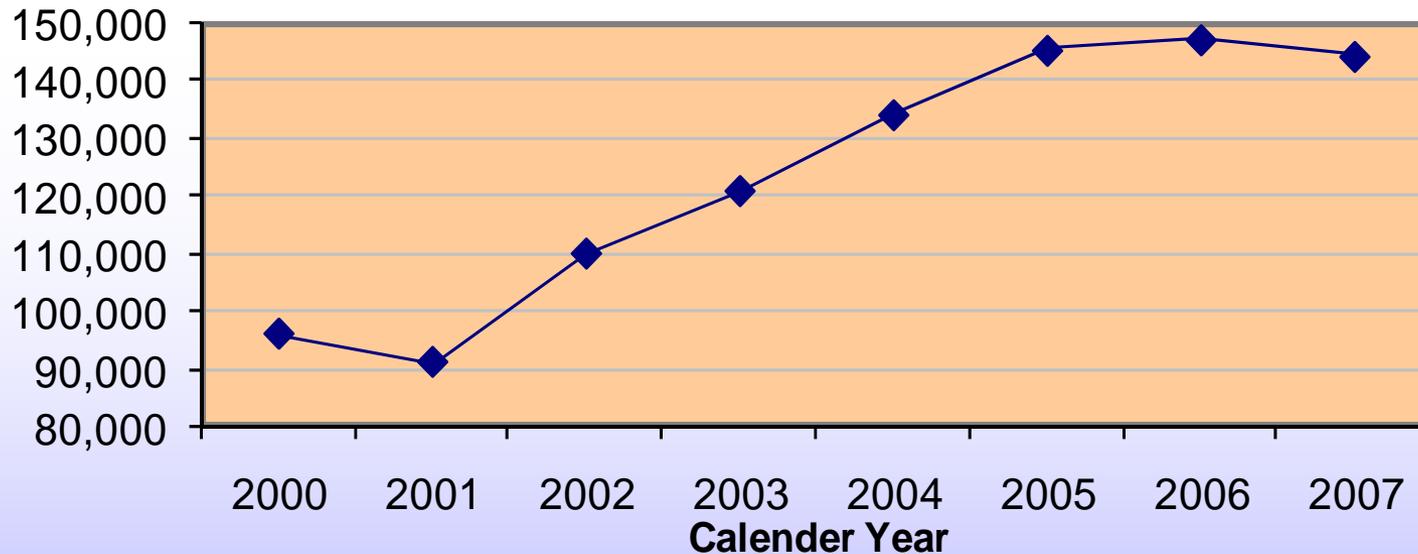
# DQ Evaluation
Impact...Comprehensive Data Quality Program

Crash and Inspection Reporting Accuracy Measure
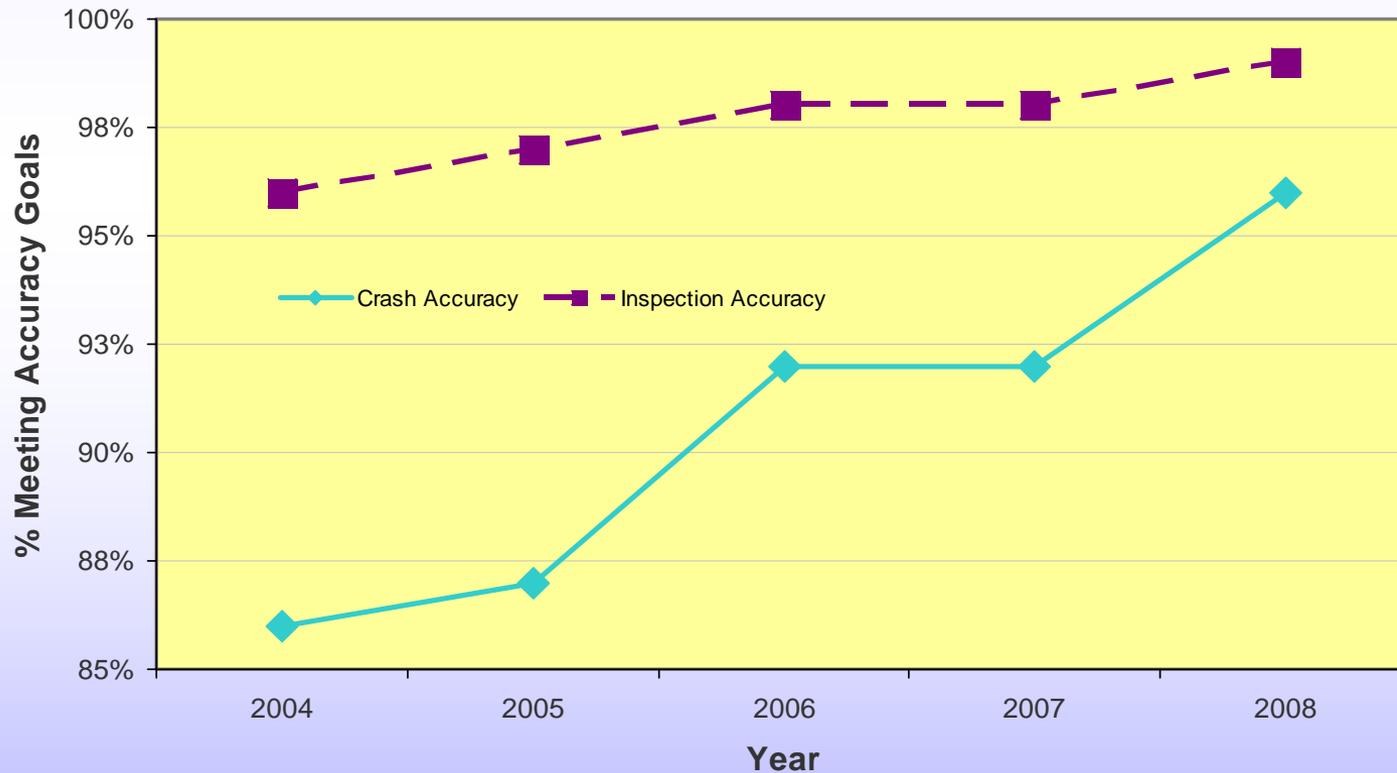
# DQ Evaluation
Impact...Comprehensive Data Quality Program

Crash and Inspection Reporting Timeliness Measure
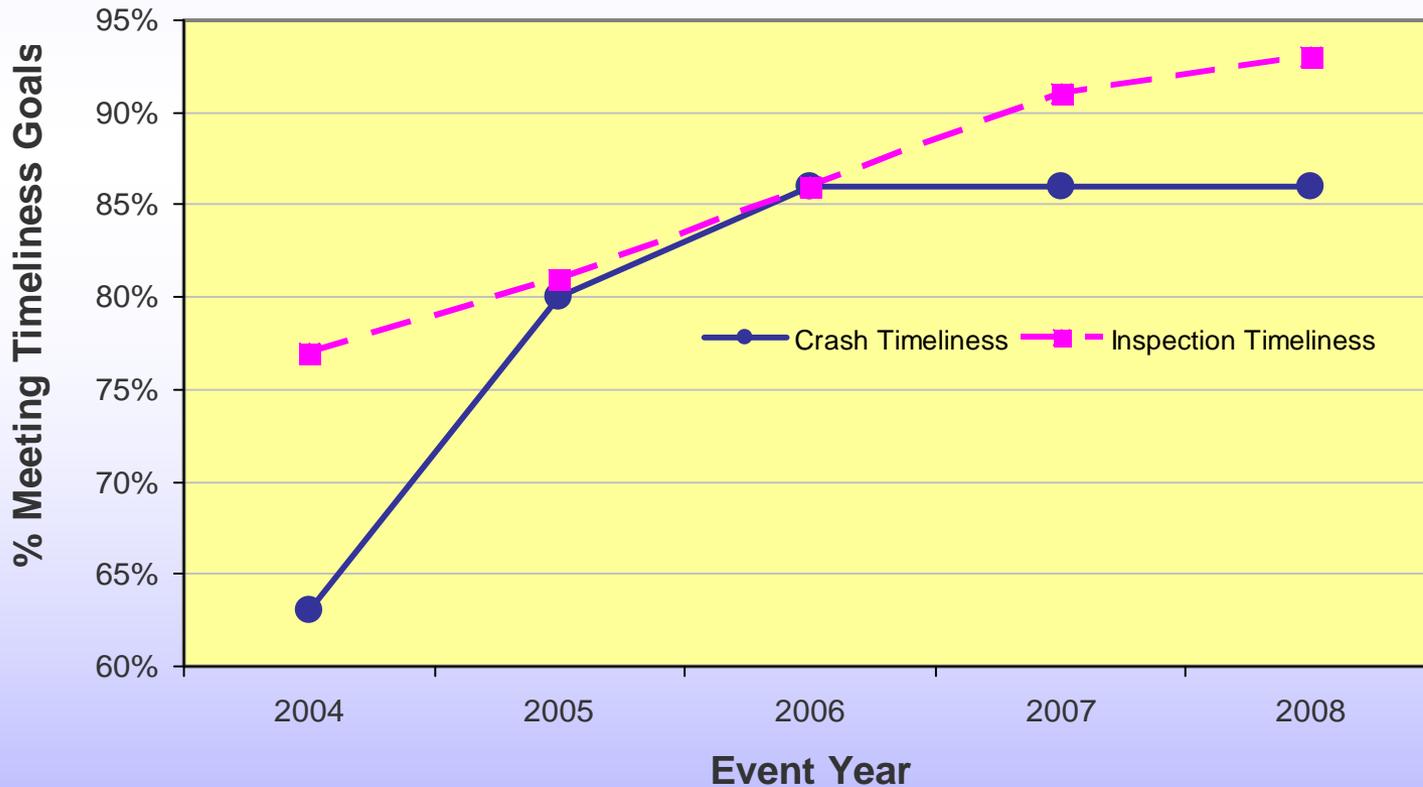
DQ Evaluation
Impact...Comprehensive Data Quality Program

Completeness of Vehicle Identification Number (VIN)
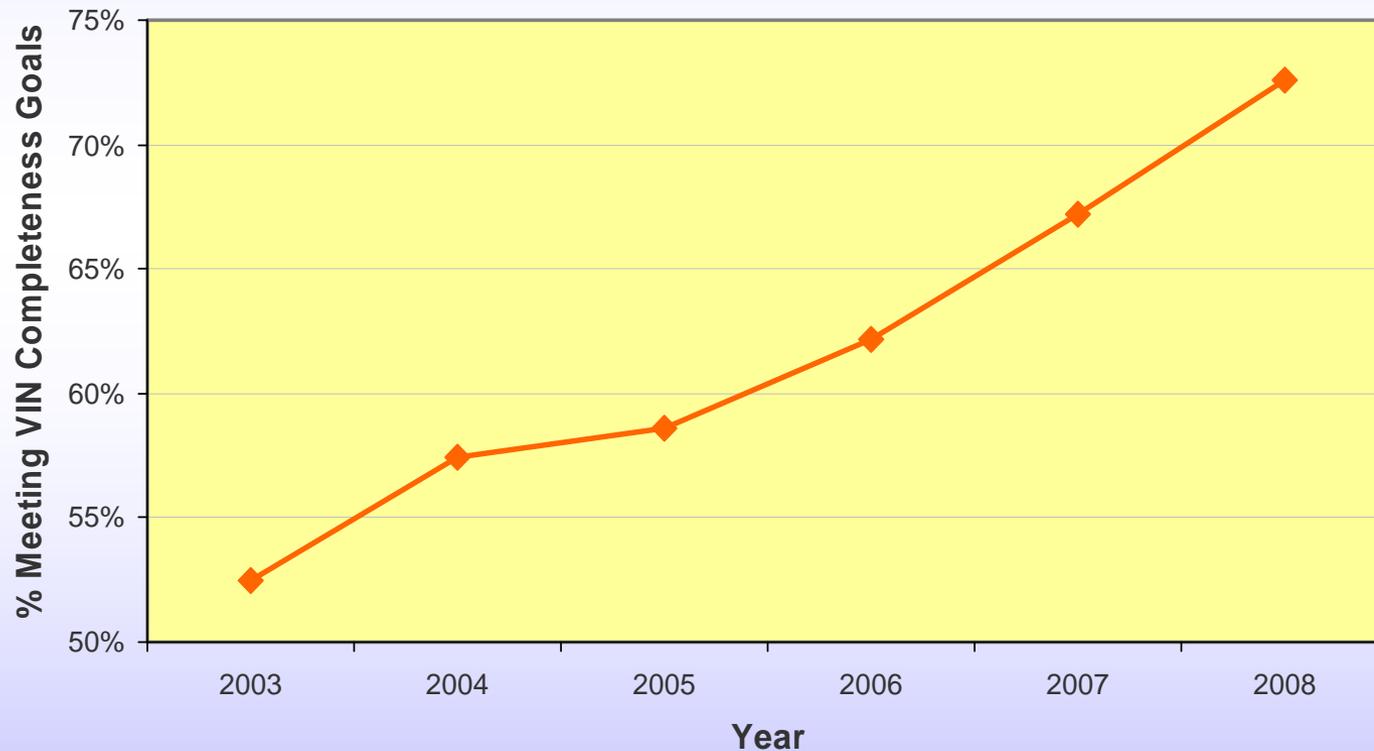
Data Corrections
DataQs

**DataQs Data Challenges
Feb 2004 – Dec 2008**

3%
2%
1%
64%
30%
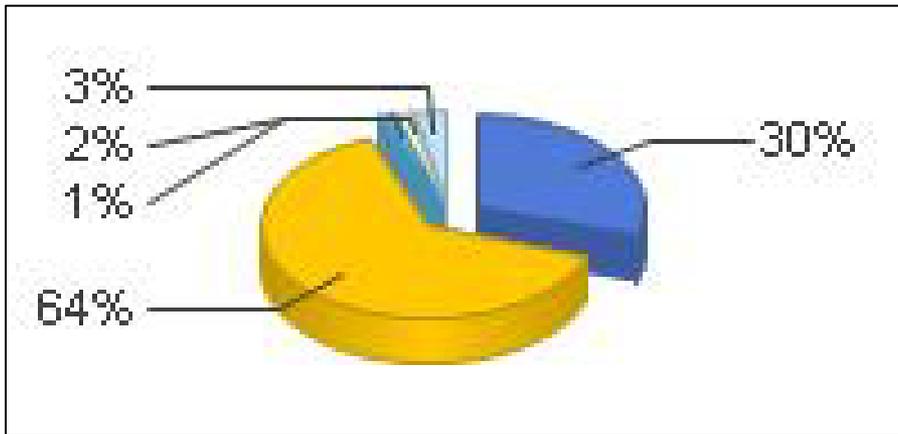
Legend:
- Total Crash
- HHG Complaint - Duplicate (Two identical complaints)
- Carrier Information (MCS-150)
- Operating Authority (OP-1, OP-2)
- Insurance Information
- Interstate Carrier - Unregistered (No US DOT #)
- Inspection - Report Request
- HHG Complaint - Fraudulent (Did not do business)
- Total Inspection
- Compliance Review
- Safety Audit
- Enforcement Action
- Other

~45,000 data challenges filed   (66% resulting in data updates)

~1,200 new challenges per month

~15,000 general public/motor carrier registrations

~350 new general public/motor carrier registrations per month

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Data Corrections
FARS/MCMIS Fatal Crash Record Matching Tool

- ♦ A tool designed to help reconcile differences between the number of fatal crash records in the FARS and MCMIS databases:

- ♦ "Match" fatal large truck and bus crash records

- ♦ Record must contain the same information in several key fields (e.g., county, date, time, VIN, DOT #, etc.).

National Results 🔓
Provides FARS to MCMIS (fatal crash records) matched counts across all States

Individual State Results 🔓
Provides FARS to MCMIS (fatal crash records) matched, potentially matched, and not matched records for each State

Future Program Improvements

♦ DQ Evaluation and Monitoring

- Enhance SSDQ Evaluation
- Release New Evaluation Reports
- Continue State Crash Data Analysis

♦ DQ Improvement

- Conduct more State Reviews
- Expand Technical Assistance
- Continue PAR Analysis and Training

Contact Information

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