

---

# **Crash Outcome Data Evaluation System (CODES) Summary and Transition**

**For: DOT TRCC**

**John Kindelberger – NHTSA**

**Dec 16, 2013**

# CODES Summary and Transition

---

Overview: CODES as developed by NHTSA provided assistance to States in linking crash data to medical data and analyzing the data. The program was transitioned to state control in 2013.

## What we'll cover

- What is CODES? (2)
- Data sets in CODES (1)
- How NHTSA administered CODES (2)
- CODES Data Products (2)
- CODES Transition (2)
- Other Recent Developments (1)

# What is CODES?

- The Crash Outcome Data Evaluation System or CODES was initiated by NHTSA in the 90's to assist States in linking crash data to medical data: Hospital and ED and/or EMS.
- Over the years CODES sought to overcome the problem of lacking identifiers or missing data in the linkage process.
- A specialized linkage application was developed and supported under a cooperative agreement with NHTSA.
- Some states added other data sets to the mix.



# CODES Data Sets

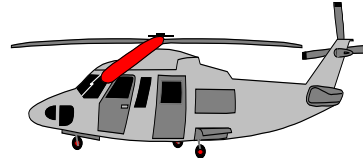
Minimum  
Required  
Data Sets in  
CODES

**Required**

Police Crash  
Reports



Ambulance  
& EMS Logs



**At least  
one  
required**

ED Data

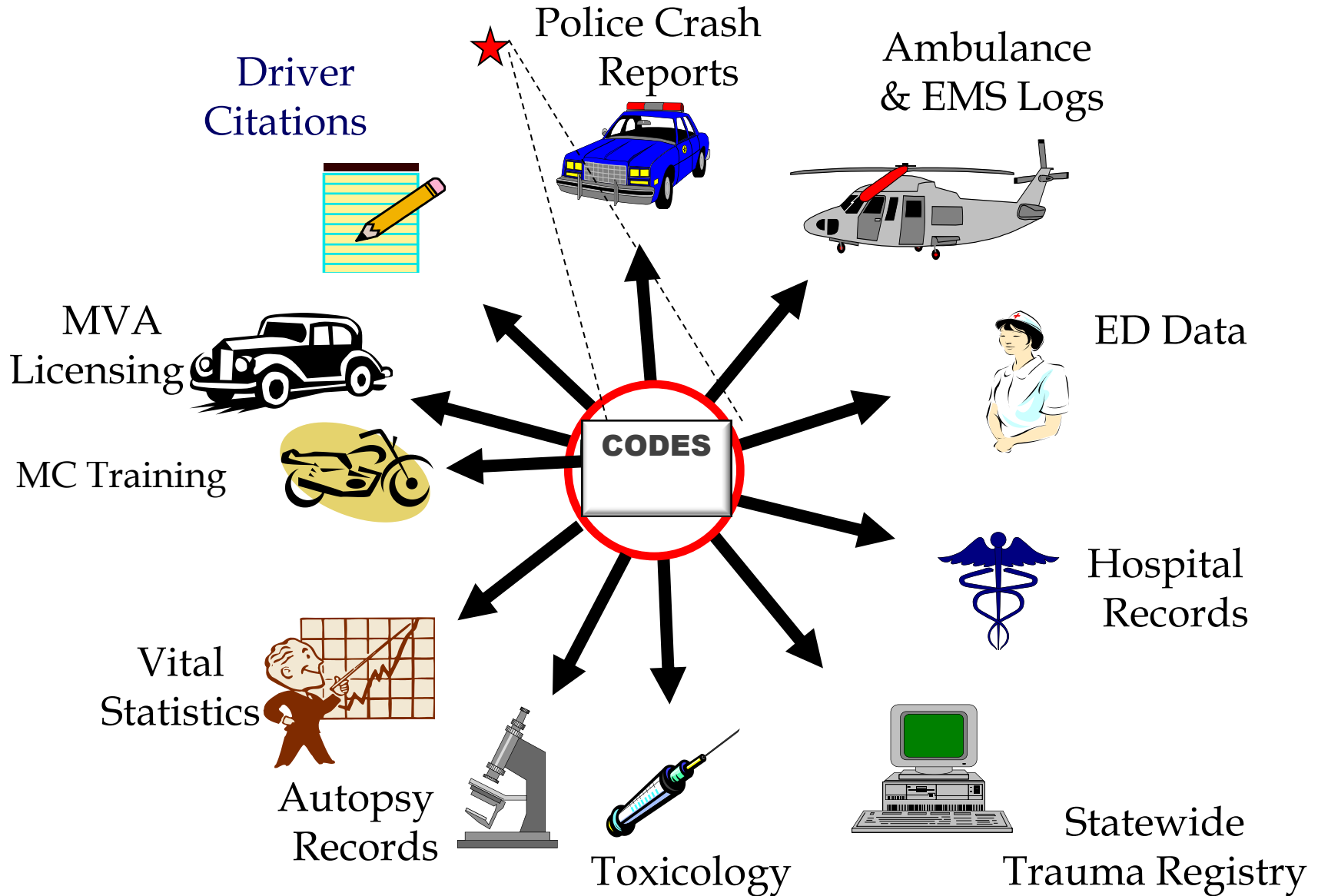


Hospital  
Records

**Required**

**CODES**

But can expand to...



# How NHTSA Administered CODES

---

- Awardees had cooperative agreements with NHTSA.
- States had to apply, qualify and be accepted; and perform well to be retained.
- Funding was partial – most grantees secured added funding
- NHTSA also provided CODES software, training and technical assistance.
- Two grantees were also Resource Centers that helped to support the program and provide training and technical assistance to grantees.

# How NHTSA Administered CODES

- Close to 30 states had CODES throughout the years.
- The active grantees in 2012-2013 were:

<i>Region 1</i>	<i>Region 3</i>	<i>Region 4</i>	<i>Region 7</i>
Conn.	Delaware	Georgia	Missouri
Maine (new)	Kentucky	S. Carolina	Nebraska
<i>Region 2</i>	Maryland	<i>Region 5</i>	<i>Region 8</i>
New York	Virginia	Illinois	Utah
		Minnesota	
		Ohio	

In recent years NHTSA also had two interagency agreements on CODES

- CDC – to explore data linkage programs and uses of linked data
- NTSB – to obtain data for a truck study

# CODES Data Products

---

Grantees were also trained in analysis of linked data.

Variables that became available for analysis related crash circumstances to outcomes such as

- hospital admission
- level of care
- injury severity / MAIS / ISS \*
- injury region and category (CDC Barell Matrix)
- charges
- length of stay
- payer
- societal costs projections

\*Using AIS as translated from ICD-9 CM using existing software.  
No software in place for change to ICD-10 CM in 2014.



# CODES Data Products

Grantees presented on a highlighted data application annually.

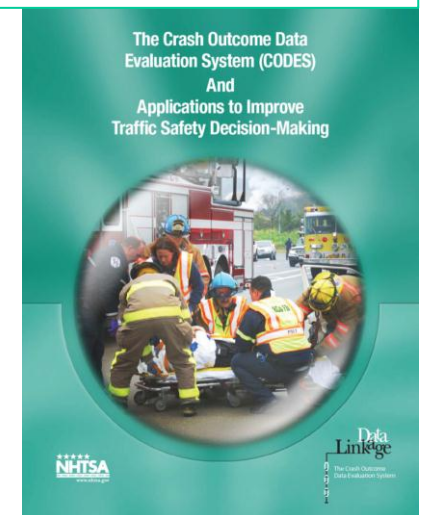
## Recent examples:

- NY – Back seat belts
- KY – Neck injuries
- MN – Lane departure crashes
- SC – Adding CODES data to annual safety book

## Recent successful legislation support examples:

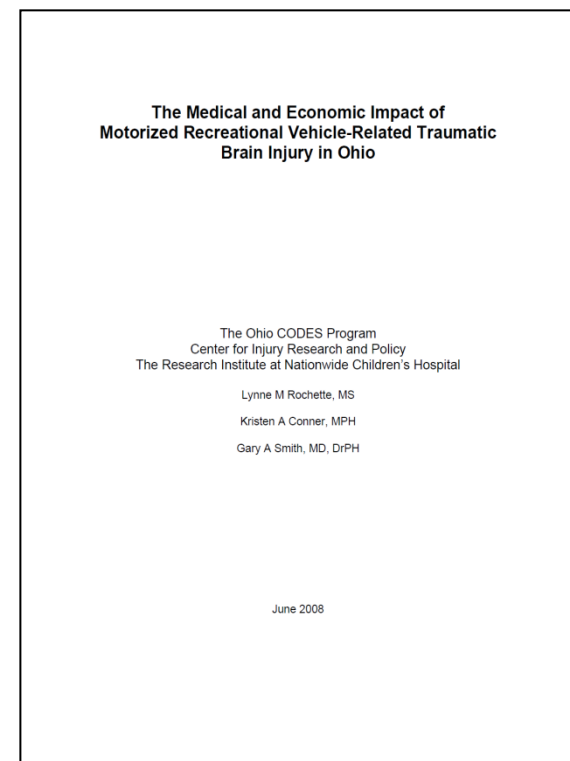
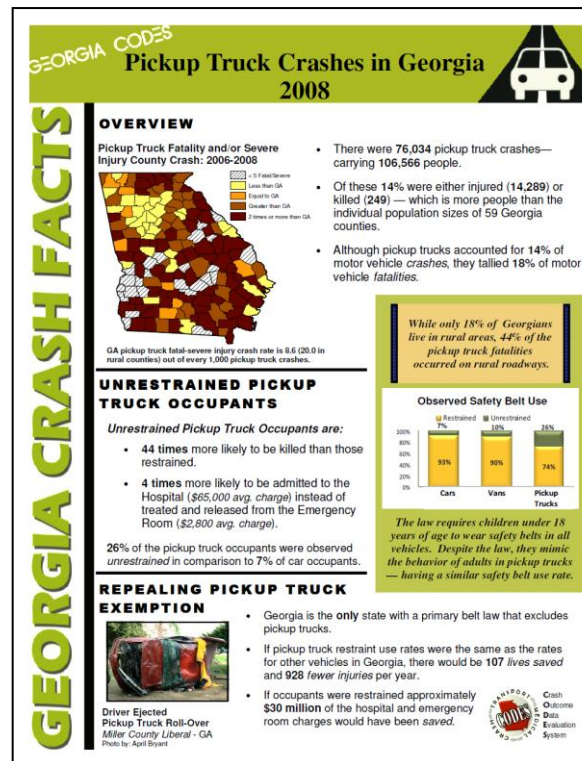
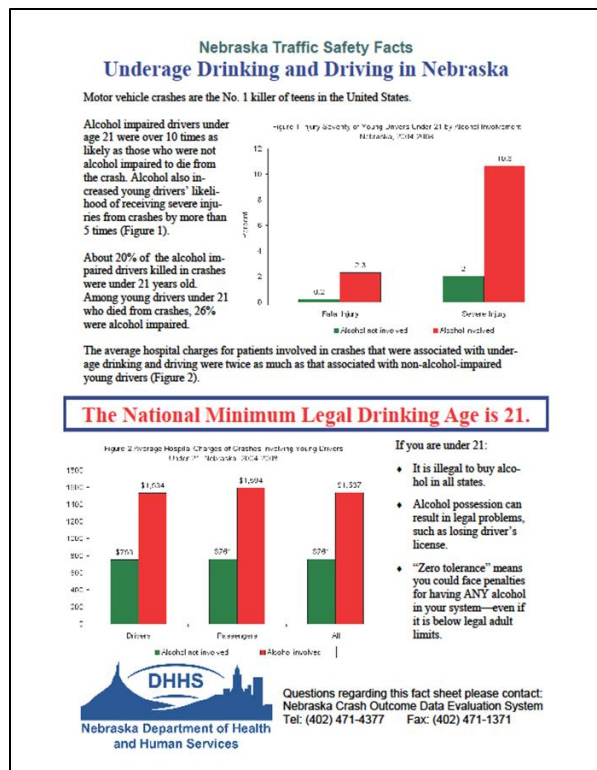
- MN – primary belt law passed
- MO – helmet law repeal defeated
- GA – pick-up belt exemption ended
- NE – teen alcohol possession law strengthened
- KY – booster seat bill passed ages 4-7

NHTSA white paper documenting state applications



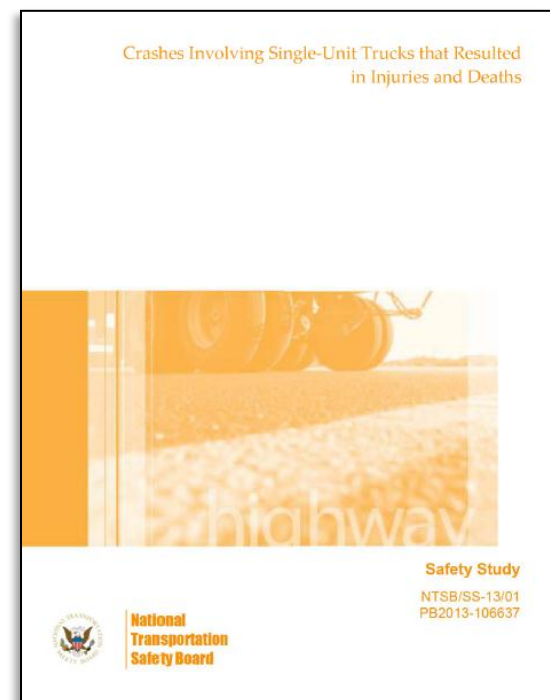
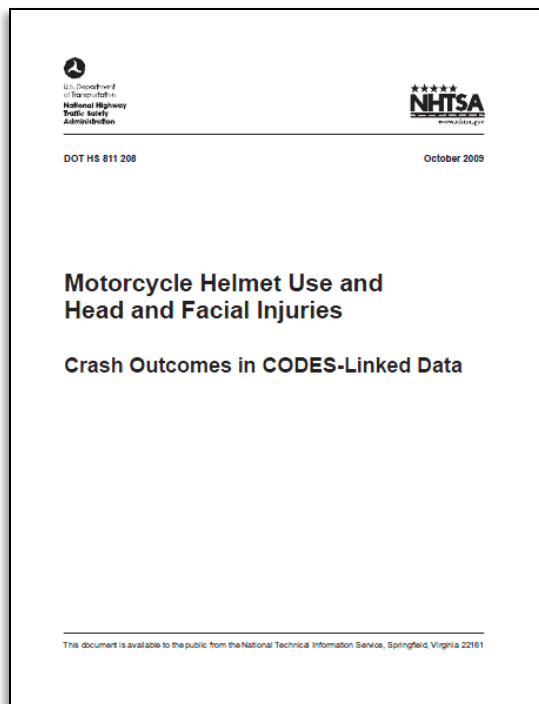
# CODES Data Products

Grantees produced state fact sheets and reports.



# CODES Data Products

Grantees contributed data for special studies.



# **CODES Transition**

---

## **Strategic Plan and Transition**

- 2009 CODES internal strategic plan outlined steps to help grantees become more independent.
- Eventual CODES transition to State control was anticipated in the strategic plan.
- Plan was shared with grantees.

In early 2012, NHTSA established final transition plan and communicated it to CODES grantees.

The last cooperative agreements ended in 2013.

# CODES Transition

# State Plans

- A number of state programs are continuing to conduct CODES independently.
  - ❑ Sometimes using funding through SHSO / TRCC grants.
- Some are still seeking funding or stopped for now but would like to resume in the future.
- Continuing programs still call themselves CODES and still use the methodology.



# **CODES Transition**

---

## **Final CODES reports currently in review**

CODES: An Overview of Methodologies and Multi-State Traffic  
Safety Applications  
University of Utah

Assessment of Characteristics of State Crash Outcome Data  
Evaluation Systems (CODES) and Other State Data Linkage  
Systems  
NHTSA/CDC/University of Maryland

Partially funded by CDC.

# Other Recent Developments

---

Transportation Research Board  
National Cooperative Highway Research Program

Two projects looking at serious injury measurement and related linkage topics.

NCHRP project 20-24,  
*MEASURING PERFORMANCE AMONG STATE DOTs:  
SHARING GOOD PRACTICES -- SERIOUS CRASH INJURY*

Cambridge Systematics, Inc.

Released September 2013.

# Other Recent Developments

---

NCHRP project 17-57,  
*Development of a Comprehensive Approach for Serious  
Traffic Crash Injury Measurement and Reporting Systems.*  
Partnered with 20-24.

University of Michigan Transportation Research Institute

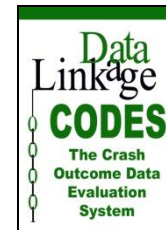
A conclusion of the project, at this point, is that linking  
police crash reports to medical data is the best way to  
obtain a serious injury measure  
(Flannagan, TRB proceedings, 2013).

report expected 2014.



# CODES Summary and Transition

---



Thank You

john.kindelberger@dot.gov  
202-366-4696