

Integration of Crash, EMS and Trauma Data: Contrasting Current Applications and Future Directions

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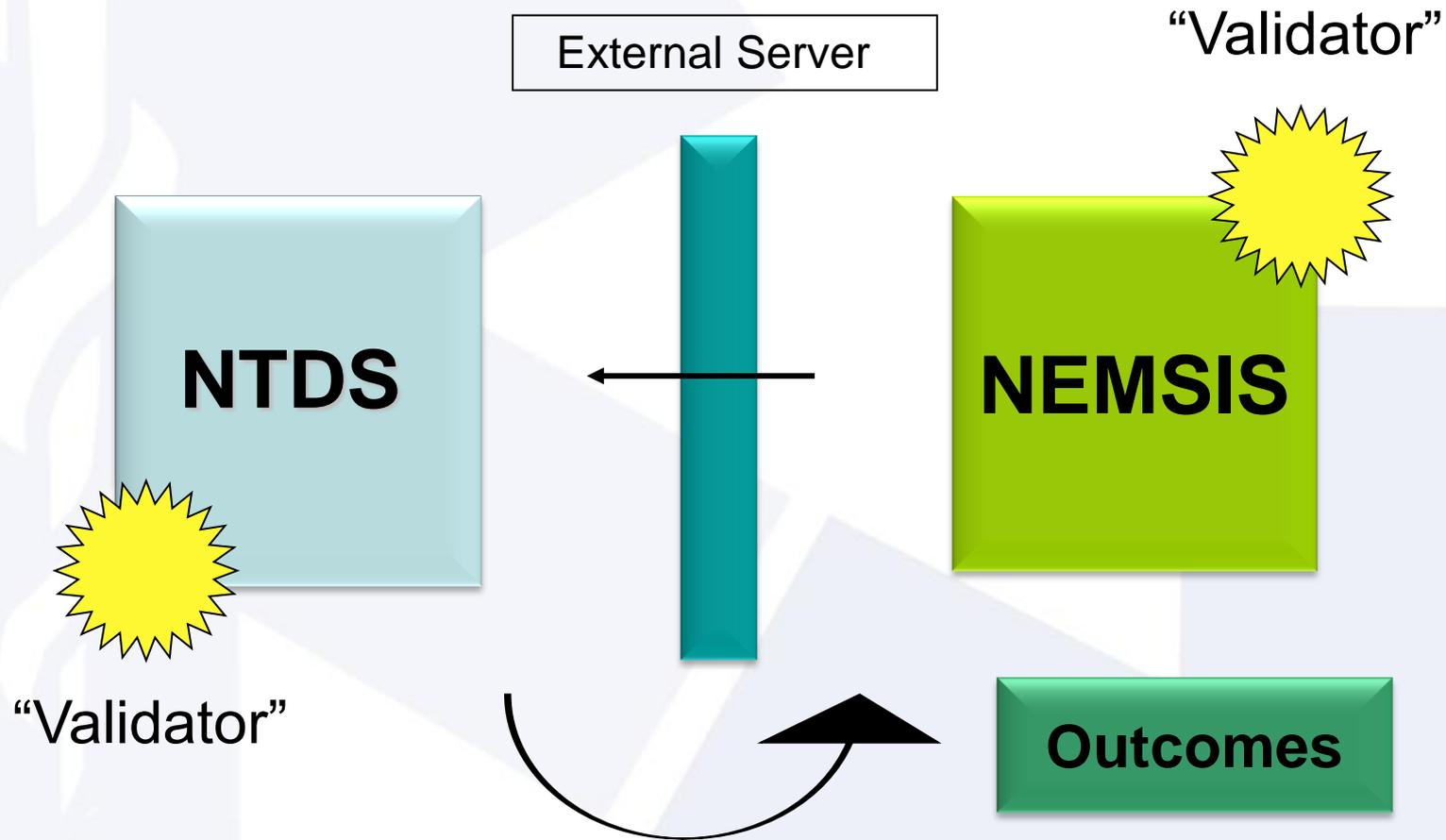
2013 DOT/TRCC Traffic Records Forum

What we will cover

- **Where are we...NEMSIS Data**
- **Crash-EMS-Trauma Blue Print**
- **Traditional Linkage Approach (NC)**
- **Low Cost, Unique Approach (KS)**
- **Making the connections (AZ)**
- **What will the future bring?**



Benefit of a Common XML



Dept. of Emergency Medicine UNC CH

EMSPIC

In North Carolina, South Carolina and West Virginia, the EMSPIC maintains and supports state EMS data system applications, provides 24/7 technical support, and analysis for process improvement



CCHI

A Practice-based, multidisciplinary research unit with a variety of informatics-related projects such as...

NC DETECT

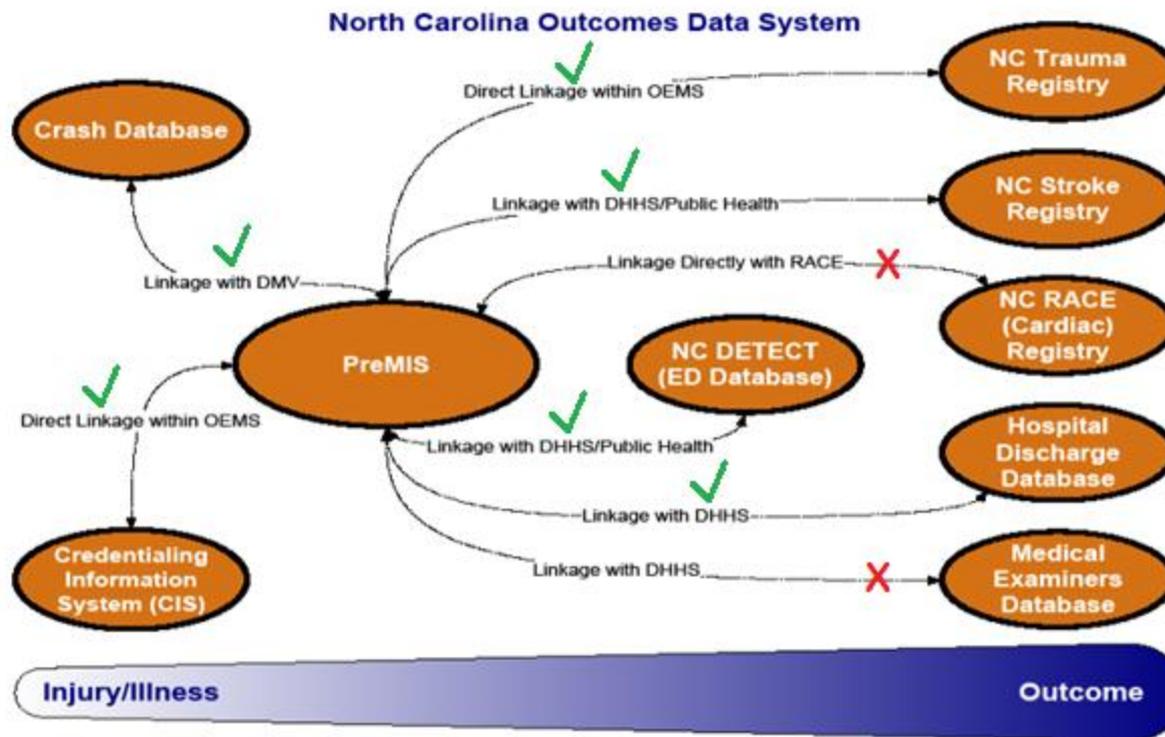
(North Carolina Disease Event Tracking and Epidemiologic Collection Tool)

A Statewide, Web-based, public health surveillance system utilizing 24/7 acute case hospital-affiliated emergency departments (EDs) in NC



NC Linkage Partners

- X = Not Finished



NC Linkage Partners (Cont.)

- Linkage Variables by Source
 - 24 hour ED Linkage:
 - (DOB, Sex, Destination hospital, DestinationDateTime)
 - **Daily** Exchange Available
 - Trauma Registry:
 - (PatName, DOB, Sex, Destination Hospital, DestinationDateTime)
 - **Daily** Exchange Available
 - Crash:
 - (DOB, Sex, County, Destination Hospital)
 - **Yearly** Exchange Available

NC Linkage Partners (Cont.)

- Linkage Variables by Source
 - Stroke Registry:
 - (PatName, DOB, Sex, Destination Hospital, DestinationDateTime)
 - **Daily** Exchange Available
 - Hospital Discharge:
 - (DOB, Sex, Destination Hospital, DestinationDateTime)
 - **On-Demand** Exchange Available
 - PCR2PCR (← Most Requested Enhancement!):

identifies multiple EMS connections when they occur. Critical for Trauma registry to know what happened on the initial call, not just the final transport to the trauma hospital.

 - **Daily** Exchange Available

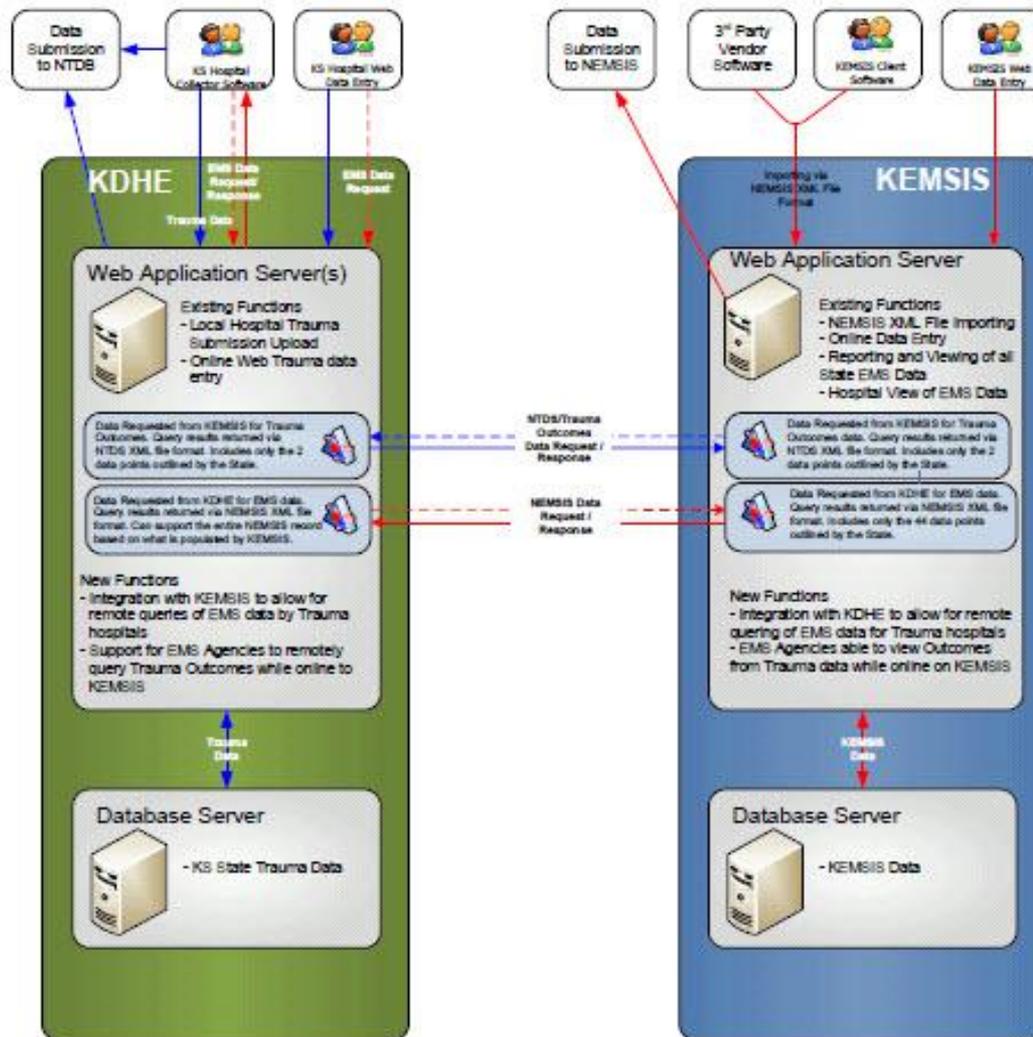
Integrating EMS Data Collection with the Trauma Registry and Fars access

- Joe Moreland
 - Kansas Board of EMS
 - EMS Data Manager
 - October 27, 2013

Solution

- ImageTrend and Digital Innovations (DI)
- DI Continuum of Care Server (CCS)
- CCS Software hosted at DI
 - ▣ Patient matching & data exchange will be done at the hospital
 - Hospital has relevant identifiers for patient match
- CCS checks to see if the EPCR is seeking is available
- CCS will use DI live server

KEMSiS and KDHE Data Integration



summary

- Trauma registrar logs into CCS and enters date patient arrived at hospital
- CCS sends web service call to ImageTrend and checks for all patients arriving the receiving hospitals 72 hours prior to and after the date entered
- Trauma registrar is presented a list of patients and selects the desired patient. 33 data elements are copied from KEMSIS and imported into trauma registry
- 2 Hospital elements returned to EMS
 - ED disposition, E22_01
 - Hospital disposition, E22_02
- \$10,000 to ImageTrend plus the \$30,000 for the hospital bridge
- \$44,000 to Digital Innovations

FARS

- **Fatal Analysis Reporting System**
- NHTSA requirement for all states to submit data for traffic crashes that have fatalities
- FYI, the FARS manual for 2010 is 706 pages in length
- Too many fields for me to count. They do not use continuous numbering and I could not find it in a spreadsheet.

EMS Elements

- C28 – Time EMS notified
- C29 – Time EMS arrived at scene
- C30 – Time EMS arrived at hospital

HELP!!!

- Michael Havenstein called and asked if he could have access to the KEMSIS database or if we could assist him locating EMS times of fatal crashes
- HIPAA
- Considered several options
- Nebraska and New Mexico have taken a similar path

Solution

- Added law enforcement permission group
- I wrote a report based that included the three fields that he needed and added eight additional fields to assist in identifying the correct patient
- KDOT already has the patients' names
- NO \$\$\$ except for 12 hours of my time and 2 of Michael's

State Level Linkage: A How To Guide



Rogelio Martinez, M.P.H.
Data and Quality Assurance
Bureau of EMS and Trauma System
Arizona Department of Health Services



Identify Stakeholders

Arizona Governor's Office of Highway Safety (GOHS)

The focal point for highway safety issues in Arizona. GOHS a cabinet agency, provides leadership by developing, promoting, and coordinating programs; influencing public and private policy; and increasing public awareness of highway safety.



Director: Alberto Gutier



Arizona Department of Health Services (ADHS)



Director: Will Humble

Promotes and protects the health of Arizona's children and adults. Its mission is to set the standard for personal and community health through direct care, science, public policy, and leadership.

Arizona Department of Transportation (ADOT)

Mission: To provide a safe, efficient, cost-effective transportation system.



Director: John S. Halikowski

Samples

- BEMSTS and ADOT will establish a secure process to integrate AZ-PIERS (pre-hospital), ASTR (trauma), and crash data.
- EMS agencies participation will increase by 30% from Q1 to the end of Q4.
- AZ-PIERS will establish a process for FARS analyst to improve their reporting to NHTSA.

Continuation of efforts

- Data integration
- Pilot studies by Interns- non identifiable information
- Erin Campbell – Probabilistic linkage and analysis of Arizona's crash data and trauma registry
- Tom Finkelstein-

Linking data

- **Deterministic**
 - Name
 - Date of Birth
 - Social Security Number
 - Gender
- **Potentials for future**
 - License Number for injured
 - VIN, crash record number, date of injury

Assessment of Injury Severity

- KABCO versus Abbreviated Injury Scale
 - Based upon full medical evaluation
 - Available at all Level I & II trauma centers
 - Can calculate from ICD-9-CM codes
 - ICDMap and ...
 - Translate to functional capacity at 1 year
 - Functional Capacity Index
 - Sickness Impact Profile & SF-36
 - Self-reported change in health status
 - Return to work

Where are we going? HIE and NEMSiS



Beyond Health Level 7

- **Harmonization with other Standards**

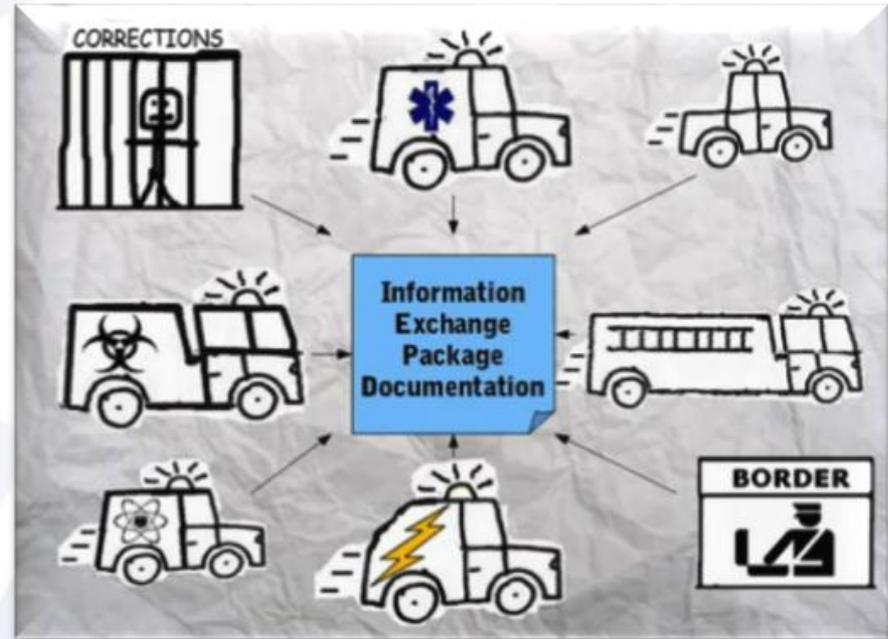
- Justice Datasets
- EDXL
- NIEM
- DEEDS V3

- **Facilitate Standards**

- CAD
- Medical Devices
- AACN (VEDS)

- **Introduce Modules**

- Air Medical
- Critical Care
- Paramedicine



Facebook Account



NEMSiS(National EMS Infor... Timeline Now

✓ Liked



NEMSiS(National EMS Information System) ✓ Liked Message

118 likes · 21 talking about this · 2 were here

Health/Medical/Pharmaceuticals
The NEMSiS Project is an effort to create a National EMS Database. The database will contain data from local and state agencies from across the nation. www.nemsis.org

About - Suggest an Edit

Photos Likes 118 Map

www.nemsis.org

NEMSiS TECHNICAL ASSISTANCE CENTER
National EMS Information System (NEMSiS)
Helping Unify EMS Data

SEARCH NEMSiS:

[Download Data Dictionary](#)

Home | The Project | Reporting Tools | Version 3 | Version 2 | Reference Materials | Support | Contact Info

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graph LR; A[Local EMS Data] --> B[National EMS Database]; C[State EMS Database] --> B; B --> D[National Reports];
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The diagram illustrates the data flow process. It starts with 'Local EMS Data' and 'State EMS Database' on the left, which feed into the 'National EMS Database' in the center. From the 'National EMS Database', the data flows to 'National Reports' on the right, which are represented by several report pages with charts and graphs.

Questions

