High-quality traffic records data is critical to effective safety programming, operational management, and strategic planning.
CONNECTICUT TRCC MEETING

MEETING AGENDA

- Introduction
- Emergency Medical Services (EMS) Program & System Initiatives –
  - RESCUE - State of Alabama Approach to NEMSIS V3
- Open Forum
- Meeting Adjourned
Rhonda Stricklin
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The University of Alabama
Alabama’s Approach to NEMSISv3

Connecticut TRCC Meeting
March 16, 2022

Dr. Jeremy Pate
Rhonda Stricklin
Alabama Transportation Institute
The University of Alabama

Presentation Outline

• Project History
• RESCUE Defined
• Development of RESCUE
• Features and Benefits
• RESCUE Exchange Project
• RESCUE Analytics Portal
• Remaining Goals
• Experiences and Lessons Learned
Project History

- Sponsored by the Alabama Office of Highway Safety with NHTSA 408/405c funds
- Collaborate with Alabama Department of Public Health, Division of EMS and Trauma
- Users are Emergency personnel across the state
- First project was a data analysis web-portal for current EMS data (2012)
  - The portal identified gaps in data quality
- This led to requests to develop data collection application
  - Began in 2014

Alabama Department of Public Health - EMS
Alabama and NEMSIS

- Alabama has a long submission history with NEMSIS, since v2 of the standard
- Timely submissions (<24 hours)
- Focus on cleanliness of data, including lots of internal data accuracy efforts and auditing
RESCUE Defined

Recording of Emergency Medical Services Calls and Urgent Care Environment

Web-based system for collecting EMS run data in ambulances and emergency response vehicles.
Includes an electronic transmission procedure that immediately transfers the data into a database at the State’s central repository
Development of RESCUE

1. Receive and Process – Submission Aggregator developed first
   a. Decided this was more important so all could submit
   b. First system to be 3.4.0 compliant (since 08/20/2015)
2. Data Collection – developed second
3. Web-based application provided free for any agency who desired

**V3 Compliant Software Testing Status - NEMSIS**

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Features and Benefits

- NEMSIS 3.5 compliant electronic Patient Care Report (ePCR) form
- Over 570 data elements
- XML Schema and Schematron Validation to minimize errors
- Web-based
- Responsive UI design
- Improved data quality
- Electronic submission allows for paperless system
- Eliminates redundant data entry
- Greatly improved timeliness of data
- Corresponding data analysis web portal
# RESCUE – 5 Major Components

<table>
<thead>
<tr>
<th>Central Repository</th>
<th>RESCUE Client</th>
<th>User and Agency Administration</th>
<th>Analytics</th>
<th>RESCUE Exchange (Hospital Portal)</th>
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**Central Repository**

- Submission by RESCUE and any third-party clients
- Receives XML of PCR
- Validates against XSD and Schematron
  - Same validations as the RESCUE client
Central Repository Report Summary

User and Agency Administration

- Part of the RESCUE interface
- Allows for management of permissions for active users
- System syncs with AlaCert, the Alabama EMS licensure database
- Uses a custom authentication system (CAPSLock)
RESCUE Client

- Built as a ground-up NEMSIS v3 system (submission and client)
- Developed in partnership with Alabama TRCC and Alabama DPH
- Uses the same Schematron validations as the server system
- Web-based client
- Transitioned from existing v2 system
- Provided at no cost to EMS services in Alabama
- January 1st, 2018 – GO LIVE

RESCUE - Reports
RESCUE – Validations (with Schematron)

RESCUE - Incident
Average PCR’s Per Month (Critical Release Period)

<table>
<thead>
<tr>
<th>Year</th>
<th>Average PCR’s</th>
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<tbody>
<tr>
<td>2018</td>
<td>52000</td>
</tr>
<tr>
<td>2019</td>
<td>66000</td>
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RESCUE Exchange

- Follow-on project began in 2019
  - To create a web application that will enable a real-time retrieval of an ePCR report properly secure from any violation of HIPAA security requirements. This would restrict retrieval of all but the ePCR of the patient that is currently being admitted to the emergency room at the hospital.
- System that uses hospital destination to show hospital staff incoming patients
- Hospitals can use the ePCR data to streamline their record entry (accuracy and speed)
- Requires entry of the Medical Record Number to retrieve record in order to allow linkage of the record ID’s
Rescue Exchange - Reports

Rescue Exchange - ATCC
Rescue Dashboard (Analytics Portal)

- The core analytics system for the Alabama NEMSIS submissions
- Based on the CARE system
- Aggregated data from all PCR’s
- Navigate through frequency counts of any number of variables
- Export to Excel/CSV (or chart image) for any of the visible data points
RESCUE Dashboard
Remaining Goal(s)

Big Goal: Data linkage between crash-EMS-trauma-hospital

EMS Run Number in eCrash

- This includes all records, including sets that did not have the field as an option at that time.
- This can happen for lots of reasons (wasn’t able to, EMS and officer weren’t there at the same time, etc.)
- Does allow record linkage, but each step makes the next linkage less likely.
Experiences and Lessons Learned

• This is a MAJOR project!
• Large learning curve on NEMSIS
• Must be maintained as NEMSIS changes regularly
• Each agency presents unique scenarios and challenges
• Critical to have a healthy partnership with the state health department/EMS office
• Different challenges between first-party RESCUE users and third-party submitters
• Constant monitoring of data volume and data quality are needed

Thank you!

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Dr. Jeremy Pate, Director of Research Operations, Alabama Transportation Institute, The University of Alabama, jrpate@ua.edu
Supplementary Material
Reference and Appendix Content
eCrash - Vehicle

![Vehicle Screen Shot]

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eCrash - Driver

![Driver Screen Shot]

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eCrash – Location/Time

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eCrash - Investigation

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## Current Materials

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<td>TRCC Traffic Records Strategic Plan</td>
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<td>TRCC CSP Wrong Way Driver Study</td>
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<td>Link to MMUCC PR-1 Crash Data Collection Main Page</td>
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“Three Biggest Causes of Fatalities on the Road are Alcohol, Speeding, & Distracted Driving   03/16/2022
## Reference Materials

- Traffic Records Program Assessment Advisory 2018
- Traffic Records Assessment 2021
- MMUCC Guideline Fifth Edition 2017
- D16.1 Manual on Classification of Motor Vehicle Crashes
- One-Page MMUCC / D16.1 / D20.1 Standards Comparison
- Traffic Records System Inventory
- Traffic Records Assessment Procedures Manual

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“Three Biggest Causes of Fatalities on the Road are Alcohol, Speeding, & Distracted Driving” 03/16/2022
OPEN FORUM

CONNECTICUT TRCC MEETING

General Discussion/Meeting Adjourned

Be Safe & Stay Healthy!!!

“Three Biggest Causes of Fatalities on the Road are Alcohol, Speeding, & Distracted Driving” 03/16/2022