

NEMSiS: What does it mean to RHCS & Rural EMS?

What I think I know about you

- Advance EMS in Steuben County
- Assist EMS Providers
- Collaboration, Networking, Administrative Development, & Education
- Strategic Plan:
 - Recruitment/Retention, Training, Cooperation, Public Awareness, Increase Funding, Financial Incentives, Enhance Quality

Today's overview

- **NEMSiS**
 - what and why
 - current state, future
- **NY State EMS data**
 - current state, future
- **Steuben County data**
 - current state, future



National Emergency Medical Service Information System (NEMSIS)

Established in 2001

The National Association of State EMS Directors in conjunction with its federal partners at the National Highway Traffic Safety Administration (NHTSA) and the Trauma/EMS Systems program of the Health Resources and Services Administration's (HRSA) work to develop a national EMS database —known as NEMSIS, the *National EMS Information System*.

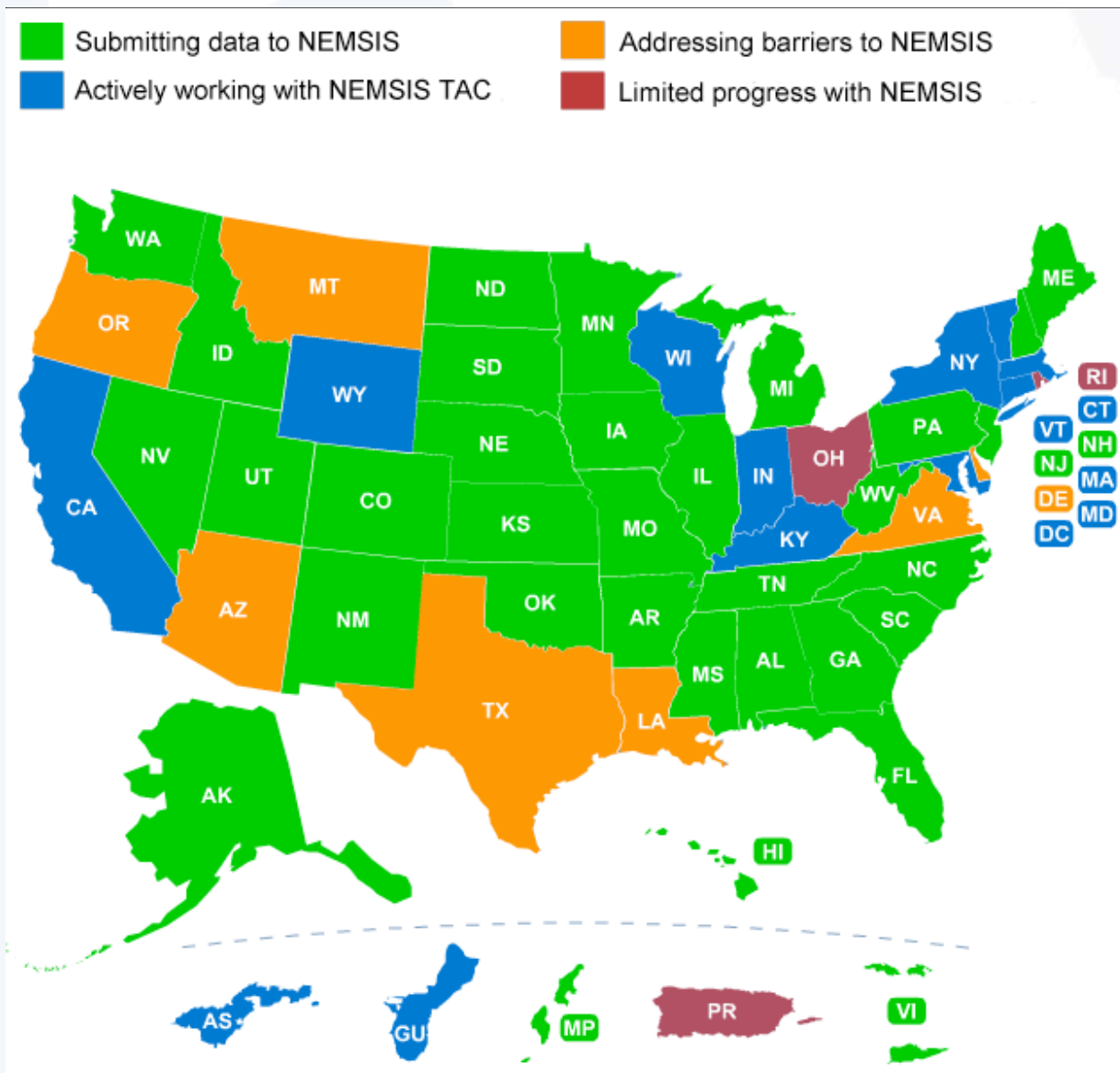
NEMSiS Project Overview

- NEMSiS Standard (established in 2003)
 - One standard for EMS data collection nationwide
 - One common language
- Promote State Data Systems
- National EMS Database
- Ultimately, an electronic PCR for every event in the US.

NEMSiS TAC

- To facilitate the collection of EMS data from States and Territories
- To create the National EMS Database
- To provide national reporting tools
- To identify trends in EMS

Current Status of States



Current Status in NY State

- Four year grant to establish an ePCR registry
 - Contract with Image Trend
 - Map different ePCR products into one data set- NYS EMS Bridge
 - Various access levels to data
 - Also revising paper PCR to match
 - NYS EMS Bridge will feed into NEMSiS
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Value of ePCR-front end

- Logic/Rules built to help
 - Accuracy
 - Focused documentation
 - Reminders
 - Spelling
 - Complete
- Faster
- Legible

Value of data- Answering Broad Questions

- What is our primary focus?
- How do we know that we are fulfilling our mission to the community?
- Do we evaluate if we provide value to our communities?
- Are we making a difference clinically with our current practices and system?
- Can we objectively prove it?
- Are our limited resources assigned appropriately in a manner that provides the greatest return?
- Are we using best practices in our community?
- How do we compare to other similar services?

Value of data

- **National**
 - Federal Grant Funding
 - Drive Curriculum
 - Determination of what works
 - Research
 - Reimbursement Schedules
 - Disaster Planning
- Data can be YOUR voice as Rural EMS at the National level

Value of data

- **Local**
 - Assuring we meet the needs of our patients
 - Determine best practices
 - Identify perceptual vs. real issues
 - Measure to Improve outcomes
 - Appropriate resource allocations
 - More accurate Billing
 - Decreased risk and liability- established standards

Examples of data use- National Research

- 2008 dataset
- Resulted in publication in AHA Resuscitation regarding “Out-of-Hospital Airway Management in the United States”

Out-of-Hospital Airway Management in the United States

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BACKGROUND

- Understanding the distribution of out-of-hospital airway procedures, their success rates and complications could guide national efforts to enhance training and practice.
- Prior studies have been limited to single EMS agencies, systems, regions, or states

OBJECTIVE

- To characterize out-of-hospital airway management interventions, outcomes and complications across the United States

METHODS

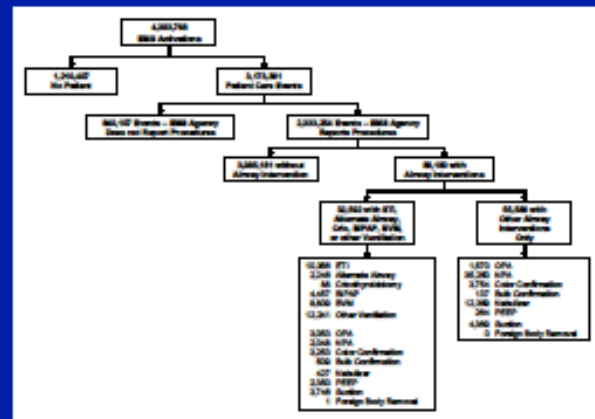
- 2008 NEMSIS Public Release Data Set from 16 states
- Identified patients receiving advanced airway management, including endotracheal intubation (ETI), alternate airways and cricothyrotomy
- Examined airway management success rates
- Examined airway management complication rates
- Analyzed the data using descriptive statistics

AIRWAY INTERVENTION COMPLICATIONS

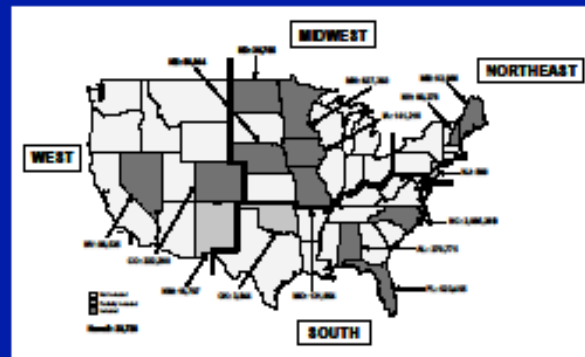
Complication	N (of 16,379) (n per 1,000 Interventions, 95% CI)
Bleeding	84 (7.0; 5.5-8.5)
Bradycardia	4 (0.3; 0.0-0.7)
Esophageal Intubation – Immediately Detected	64 (5.3; 4.0-6.6)
Esophageal Intubation – Other	12 (1.0; 0.4-1.6)
Hypotension	6 (0.5; 0.1-0.9)
Hypoxia	10 (0.8; 0.3-1.3)
Injury	13 (1.1; 0.5-1.7)
Vomiting	80 (6.7; 5.2-8.1)
Other	402 (34.9; 31.7-38.2)

RESULTS

AIRWAY INTERVENTIONS



States Contributing Most to NEMSIS in 2008



AIRWAY INTERVENTION SUCCESS RATES

Procedure	Successful / Subgroup Total (%; 95% CI)	Univariable Odds Ratio (95% CI)
Endotracheal Intubation	6,482 / 8,438 (77.0; 76.1-77.9)	-
Cardiac Arrest*	3,494 / 4,482 (78.0; 76.7-79.2)	Referent
Non-Arrest Medical*	616 / 846 (72.8; 69.7-75.8)	0.8 (0.6-0.9)
Non-Arrest Injury*	417 / 505 (82.6; 79.0-85.8)	1.3 (1.1-1.7)
Pediatric age<10 years	295 / 397 (74.3; 69.7-78.5)	Referent
Pediatric age 10-19 years	228 / 289 (78.9; 73.7-83.5)	1.3 (0.9-1.9)
Adult age≥20 years	5,829 / 7,552 (77.2; 76.2-78.1)	1.2 (0.9-1.5)
Rapid-sequence Intubation	289 / 355 (81.4; 80.0-82.8)	N/A
Population Setting		
Rural	945 / 1,238 (77.0; 74.6-79.3)	Referent
Suburban	1,094 / 1,490 (73.4; 71.2-75.7)	0.8 (0.7-0.99)
Urban	4,153 / 5,305 (78.3; 77.2-79.5)	1.1 (0.9-1.3)
Wilderness	278 / 383 (72.6; 68.1-77.1)	0.8 (0.6-1.00)
US Census Region		
Midwest	1,604 / 1,920 (83.5; 81.9-85.2)	2.1 (1.8-2.4)
Northeast	779 / 917 (85.0; 82.6-87.3)	2.3 (1.9-2.8)
South	2,801 / 3,852 (72.7; 69.5-75.8)	Referent
West	1,296 / 1,629 (79.7; 77.7-81.6)	1.6 (1.4-1.9)
Alternate Airways		
Combibute	1,564 / 1,794 (87.2; 85.5-88.7)	-
CPA	971 / 1,162 (83.6; 81.3-85.6)	Referent
Esophageal Obturator	88 / 104 (84.6; 76.2-90.9)	1.1 (0.6-2.0)
Laryngeal Mask Airway	505 / 530 (95.3; 93.1-96.9)	4.0 (2.6-6.4)
King LT	4 / 4 (100.0; 80.0-100.0)	N/A
Cricothyrotomy (needle and open)	61 / 70 (87.1; 77.0-93.9)	N/A

*N/A indicates no airway use in that category because of unknown number of attempts for 1,244 cases
ETI = Endotracheal Intubation; UA = Unilateral Atrial

CONCLUSIONS

- Out-of-hospital ETI success rates are low.
- Improvements in out-of-hospital airway management quality are required.

Examples of data use- Local Research

- CNY 12 Lead use published nationally
 - Retrospective review of MI's brought by EMS

Examples of data use- CQI

- Skill success rates
 - Protocol compliance
 - Return to refusals
 - Times (chute, response, etc)
- *outside norms, trends by person, trends by agency, trends by system

Examples of data use- Education

- Identify CME needs, based on issues
- Identify common call types
- Did re-training efforts work well?

Examples of data use-

Linking other data

- Education records
 - Does your BTLS/PHTLS program make a difference for on-scene times in trauma?
 - Are your CPR/AED training efforts in the community making a difference?

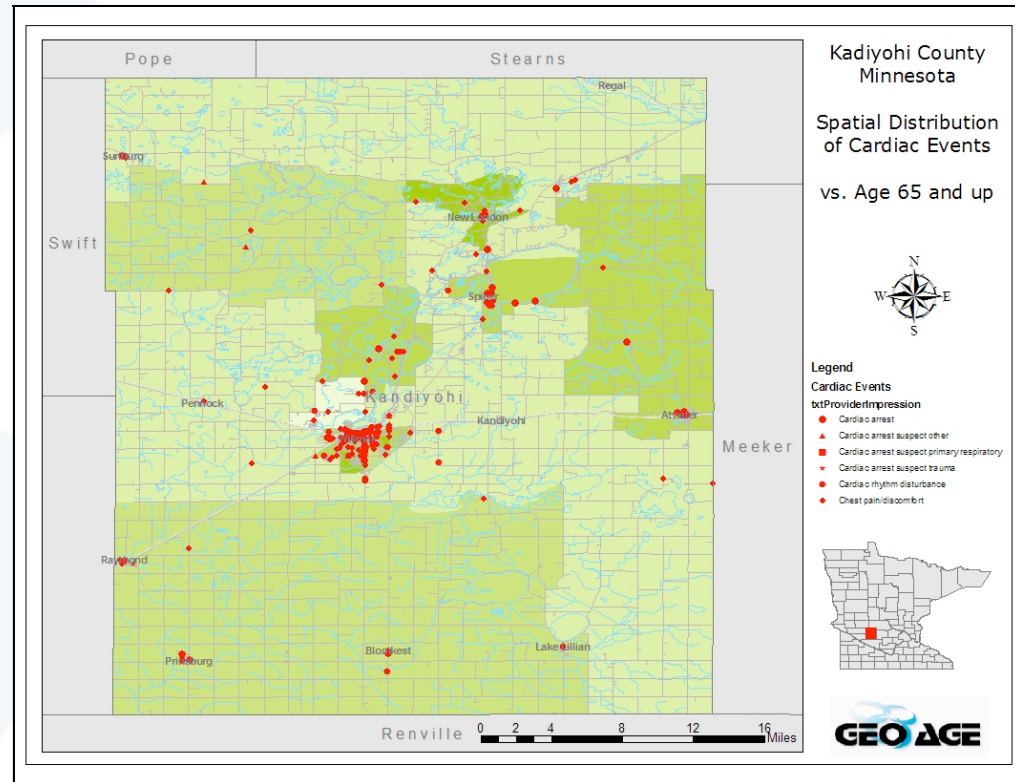
Examples of data use-

Protocol revisions

- Based on trends, issues, opportunities
- Do we ever use XYZ???
- Do we need to add ABC???

Examples of data use- System Design

- AED placement
- ALS vs BLS
- CON challenges



Current Status in Steuben

- 2006 ePCR project
- Other electronic?
- Paper

- Change in NYS PCR is coming, to gather the NEMSiS data points
 - paper or electronic

Next steps for Steuben

- Understand the value
- Spread the understanding
- Workgroup to champion the cause
 - What did you learn from the past
 - What is available (vendors)
 - Funding
 - Training, implementation plan
- Resources to help (DOH and TAC)