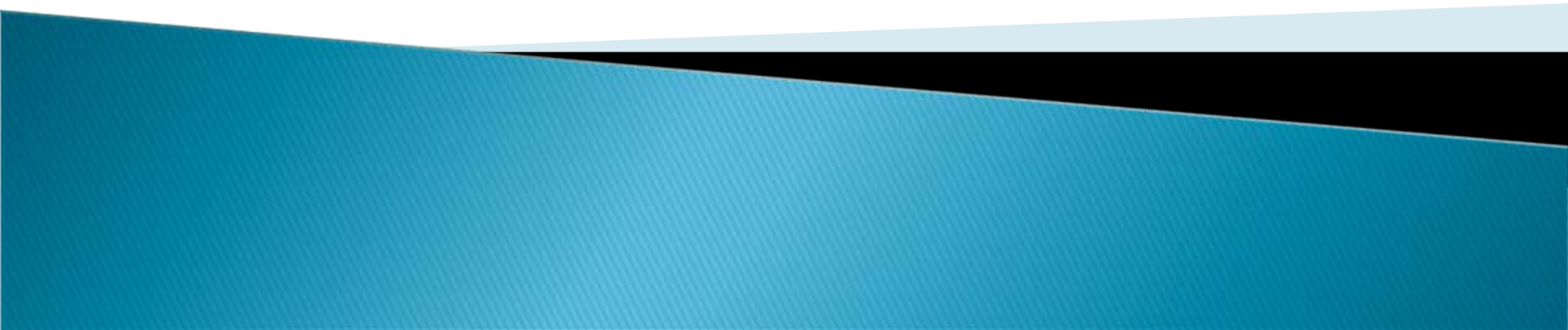


2010 HITS Project

New EMS Tools for Highway Risk Assessment

Steering Committee Meeting
February 17–18, 2010
Bethesda, MD





Mexican Hat Motor Coach Crash

- ▶ Charter bus with 53 passengers overturned on rural highway near Mexican Hat, Utah, in January 2008.
- ▶ Crash not reported for 36 minutes.
- ▶ 1st EMS Unit reached scene 1 hour after crash.
- ▶ Victims still being transported more than 4 hours after crash.
- ▶ 9 killed and 43 seriously injured.
- ▶ No “Golden Hour” advantage.



Motor coach , post-crash

50 of 53 occupants were ejected



Mass casualty incidents on rural stretches of highway pose challenges

- ▶ Mexican Hat crash demonstrated importance of ready access to features taken for granted in emergency response situations, i.e.,
 - Communication ability (ability to call 9-1-1)
 - Quick EMS response
 - Advanced Life Support (ALS) level of care
 - Access to trauma centers
- ▶ **None were available in this sparsely populated area.**
- ▶ Given the limitations, emergency response performed exceedingly well.

EMS Response & Transport

- ▶ San Juan County's 8 ambulances – all volunteer, Basic Life Support (BLS)
- ▶ Kayenta Navajo Nation– 4 BLS ambulances
- ▶ Moab–Grand County EMS– 3 ALS ambulances
- ▶ Mesa County Colorado – 2 ambulances
- ▶ Durango, Colorado – 2 ambulances
- ▶ Air ambulances grounded due to weather
- ▶ **Closest hospital – 75 miles**
- ▶ **Closest Level 1 Trauma Center– 190 miles**

Facility	Trauma level ^A	Distance from site	Number of injured treated ^B
Blanding Family Practice Blanding, Utah	No trauma unit	43 miles	9
Kayenta Medical Clinic Kayenta, Arizona	No trauma unit	45 miles	2
San Juan Hospital Monticello, Utah	No trauma unit	75 miles	28
Chinle Comprehensive Healthcare Facility Chinle, Arizona	No trauma unit	115 miles	2
Allen Memorial Hospital Moab, Utah	Level IV	117 miles	5
Sage Memorial Hospital Navajo Nation, Tuba City, Arizona	No trauma unit	120 miles	2
San Juan Regional Medical Center Farmington, New Mexico	Level III	130	3
Flagstaff Medical Center Flagstaff, Arizona	Level I	190 miles	2
St. Mary's Hospital Grand Junction, Colorado	Level II	230 miles	10
Banner Good Samaritan Hospital Phoenix, Arizona	Level I	340 miles	2
Primary Children's Hospital Salt Lake City, Utah	Level I	360 miles	1
University Hospital Salt Lake City, Utah	Level I	360 miles	1
Intermountain Healthcare LDS Hospital Salt Lake City, Utah	Level I	360 miles	1


^ATrauma centers are designated levels I-V, with level I providing the highest level of care based on American College of Surgeons criteria.

^BThe total number of injured treated is greater than the number of motorcoach occupants because several of the injured were moved between facilities.

NTSB recommendations to AASHTO & NASEMSO

In letter dated 5/29/2009:

Work with the Federal Highway Administration (FHWA) to develop and implement criteria based on traffic patterns, passenger volumes and bus types that can be used to assess the risks of rural travel by large bus types. (NTSB Safety Recommendation H-09-08)



NASEMSO HITS

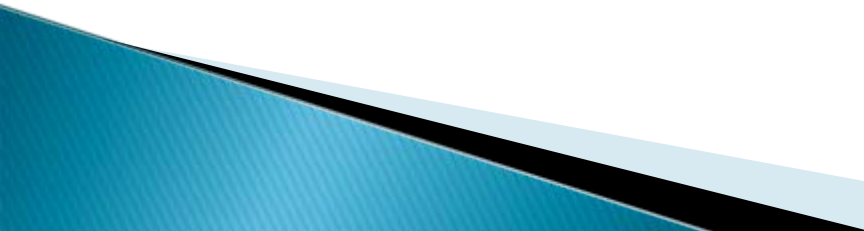
(Highway Incident and Traffic Safety)

Committee Response




New EMS Tools for Highway
Risk Assessment Project:
ERRA & MIECE

Emergency Response & Readiness Assessment Tool (ERRA)

- ▶ Evaluation tool to assess degree of optimum preparedness for responding to mass casualty events.
 - ▶ To be used by local, regional or state EMS agencies for self-evaluating readiness to respond.
 - ▶ Assessment results can influence EMS and highway safety programmatic decisions.
 - ▶ Can be used as scorecard, establishing benchmarks and progress made.
- 

ERRA: Benchmarks, Indicators and Scoring

- ▶ Benchmarks are overarching goals, expectations or outcomes.
 - ▶ Indicators are measurable components of the benchmark.
 - ▶ Scoring breaks down the indicator in completion steps. Scoring assesses current status and measures progress.
- 

Scoring

Score	Progress Scoring
0	Not known
1	No
2	Minimal
3	Limited
4	Substantial
5	Full

ERRA modeled after Trauma System Self-Assessment

BENCHMARK

302. The trauma system is supported by an EMS system that includes communications, medical oversight, prehospital triage, and transportation; the trauma system, EMS system, and public health agency are well integrated.

Essential Service: *Link To Provide Care*

Indicator	Scoring
<p>302.1 There is well-defined trauma system medical oversight integrating the specialty needs of the trauma system with the medical oversight for the overall EMS system.</p> <p>Note: The EMS system medical director and the trauma medical director may, in fact, be the same person.</p>	<ol style="list-style-type: none">0. Not known1. There is no medical oversight for EMS providers within the trauma system.2. EMS medical oversight for all levels of prehospital providers caring for the trauma patient is provided, but such oversight is provided outside of the purview of the trauma system.3. The EMS and trauma medical directors have integrated prehospital medical oversight for prehospital personnel caring for trauma patients.4. Medical oversight is routinely given to EMS providers caring for trauma patients. The trauma system has integrated medical oversight for prehospital providers and routinely evaluates the effectiveness of both on-line and off-line medical oversight.5. The EMS and trauma system fully integrate the most up-to-date medical oversight and regularly evaluate program effectiveness. System providers are included in the development of medical oversight policies.

ERRA Example for State

- ▶ **Benchmark:** The location of persons calling into 9-1-1 can always be identified.
- ▶ **Indicator:** The entire state is covered by enhanced 9-1-1 (location of caller displayed).
- ▶ **Scoring:**
 - 0 = Not known
 - 1 = No Enhanced 9-1-1
 - 2 = Partial enhanced 9-1-1 coverage
 - 3 = Half of state covered by E 9-1-1
 - 4 = Most of state covered by E 9-1-1
 - 5 = Entire state covered by E 9-1-1



ERRA Exercise

▶ Benchmark:

▶ Indicator:

▶ Scoring:

• 0 =

• 1 =

• 2 =

• 3 =


• 4 =

• 5 =

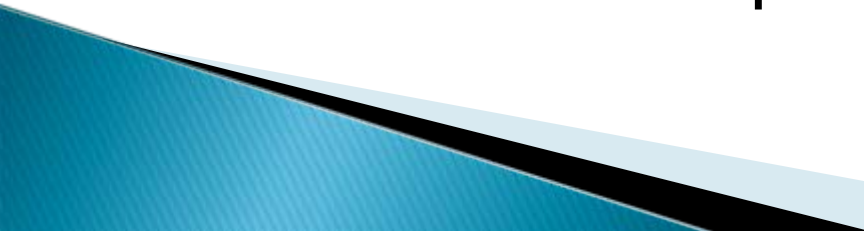
Enjoy a Break

A decorative graphic at the bottom of the slide consisting of a dark blue wavy shape on the left, a black horizontal bar, and a light blue wavy shape on the right.

Model Inventory of Emergency Care Elements (MIECE)

- ▶ An Emergency Care Inventory
 - ▶ Working Matrix of Data Elements
 - ▶ Use of defined characteristics of emergency care system
 - ▶ To display resource availability and system capacity by segments of highway
- 

MIECE Modeled after MIRE (Model Inventory of Roadway Elements)

- ▶ MIRE includes listing of roadway inventory and traffic elements critical to safety management.
 - ▶ MIRE proposes standardized coding for each.
 - ▶ MIRE is to become companion to MMUCC (Model Minimum Uniform Crash Criteria).
 - ▶ MMUCC is the standard for crash data variables in state and local jurisdictions
 - ▶ MIRE to be completed in summer of 2010.
- 

MIRE Matrix Includes:


- ▶ 180 data elements
- ▶ Data elements divided among 3 broad categories:
 1. roadway segments
 2. roadway alignment
 3. roadway junctions

Examples: Number and type of travel lanes, traffic control devices, intersection features, bridges and rail grade crossings, traffic volumes

MIRE Matrix Example

Generic Variable Description	Definition	MMIRE Priority ¹²	Ease of Data Collection ¹³	HPMS ¹⁴	IHSDM ¹⁵	Safety Analyst ¹⁶	TSIMS ¹⁷	MMUCC
26. Pavement Roughness Date	Date pavement roughness number assigned	2						
27. Pavement Condition	Pavement condition (descriptive scale)	2	D	S			M	
28. Pavement Condition Date	Date pavement condition assigned	2						
I.c.2. Lane Descriptors								
29. No. of Thru Lanes	Number of thru lanes, including HOV and reversible lanes	1	E	U	Y	M	M	YES
30. Average Thru Lane Width	Average lane width used by traffic (i.e., not including wide curb lanes, parking area, bicycle lanes, etc.)	1	M	S	Y	O	M	YES
31. Exclusive Left Turn Lane Presence	Exclusive left turn lane type	1	E					
32. Exclusive Left Turn Lane Length	Exclusive left turn lane length	1	E					
33. Exclusive Right Turn Lane Presence	Exclusive right turn lane type	1	E					
34. Exclusive Right Turn Lane Length	Exclusive right turn lane length	1	E					
35. Auxiliary Lane Presence/Type	Presence or type of auxiliary lane	1	E					
36. Auxiliary Lane Length	Length of auxiliary lane	1	E					
37. HOV Lanes	Presence of HOV lanes in segment	1	M	U		M/O		
38. HOV Lane Types	HOV lane types	2	E					
39. Reversible Lanes	Number of reversible lanes present on segment	1						
40. Presence/Type of Bicycle Facility	Presence or type of bicycle facility on segment	1	D			O	B	YES
41. Width of Marked Bicycle Lane or Bike Path	Width of marked bicycle lane or bike path	1	D					

MIECE Example


- ▶ **Data Element:** Ground Ambulance
 - ▶ **Definition:** EMS vehicle that travels by ground, capable of transporting patient on cot, staffed by one or more persons trained to a minimum of EMT level
 - ▶ **Priority:** 1
 - ▶ **Ease of Data Collection:** E (Easy)
- 




MIECE Exercise

- ▶ Data Element:
- ▶ Definition:
- ▶ Priority:
- ▶ Ease of Collection:

Tangible Deliverables

- ▶ 1st Edition of Integration and Response Capability Assessment – ERRA
 - ▶ 1st scorecard of state level assessment findings
 - ▶ Draft Matrix of Emergency Care Inventory – MIECE
 - ▶ A Proof of Concept for MIECE
- 

Intangible Deliverables

- ▶ Building relationships between highway safety and EMS partners
 - ▶ Improved understanding of what influences safe roadway travel
 - ▶ ????
- 

Questions

Next Steps



Your caption here

