

Welcome to the National Academies, TRB 95th Annual Meeting
 "Research Convergence for a Multimodal Future"

**The National Academies
 Transportation Research Board
 (TRB)
 EMS Transport Safety ANB10(5)
 January 2016 Subcommittee
 Meeting**



**Tuesday January 12th 10:15-12:00
 Marriott Marquis, Ballroom Salon 16 (M2)**



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Transportation Research Board 95th Annual Meeting,
 National Academies Washington, DC, January 12th, 2016
 "Research Convergence for a Multimodal Future"

**Emergency Medical Services Transport Safety
 Subcommittee ANB 10 (5)
 2016 January Meeting:
 ANB10(5) – EMS Transport Safety
 and applied leadership in
 innovation**



Nadine Levick, MD MPH
 Chair Emergency Medical Services Subcommittee ANB10 (5), TRB
 CEO, Research Director, EMS Safety Foundation
 Eileen Frazer RN
 Co-Chair ANB10(5) TRB
 Executive Director of Commission on Accreditation of Medical
 Transport Systems (CAMTS)



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**Emergency Medical Services Safety
 Subcommittee ANB10(5)
 of the Transportation Research Board
 Tuesday January 12th, 2016
 10.15-12.00
 also via Webinar, Washington DC**

Chair – Nadine Levick MD, MPH
 Co-Chair – Eileen Frazer RN

Sponsored by Transportation Safety
 Management Committee (ANB10) –



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**Inaugural 2008 ANB10(5) Subcommittee
 meeting**




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TRB Annual Symposium




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95th TRB www.TRB.org




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Today's AGENDA

| | | |
|---------|---|------------------|
| 1. | Welcome – Sign in/Log in | 10:15 - 10:20 AM |
| 2. | Opening Remarks - Nadine Leveck and Eileen Frazer | 10:20 – 10:25 AM |
| 3. | Subcommittee Meeting | 10:25 – 11:15 AM |
| 3.1 | Introductions | |
| 3.2 | Review and Approval of Minutes from 2015 | |
| 3.3 | Review of Subcommittee activities 2015 | |
| 3.4 | Sub-committee work program updates: | |
| 3.4.1 | Forthcoming EMS Medical Transport Summit Plans | |
| 3.4.2 | Research Needs Statements - Research Topics Database | |
| 3.4.3. | Administrative issues | |
| 3.4.3.1 | Liaison organizations | |
| 3.4.3.2 | TRB Changes/Communications/Website | |
| 3.4.3.3 | Membership/Recruitment | |
| 3.4.3.4 | 2017 TRB Session Topics and Calls for Papers | |
| 3.5 | EMS National Updates – | |
| 3.5.1 | Standards developments in 2015 | |
| 3.5.2 | NAEMT Safety Course Update | |
| 3.5.3 | Federal Projects | |
| 4. | Innovation/ Adopting change- | 11:25-11:45 AM |
| 4.1 | TRB posters, papers and presentations - Systems and Rollover | |
| 4.2 | Ambulance Design Innovation – Hands on and voice activated commands | |
| 4.3 | Discussion of neonatal patient transport safety guidelines | |
| 5 | Research Needs | 11:45- 12:00PM |
| 6 | Adjourn | 12:00PM |

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What is EMS?

- Emergency Medical Services – (EMS)
- Emergency medical care, public health, public safety and patient transport
- Bridge between the community and the hospital
- Volunteer – professional
- Urban – rural
- Disaster response
- Majority of transports NOT critical or life threatening – (<3% are critical)

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Transport related aspects of EMS

- dispatch of EMS vehicles
- transport policies and protocols
- vehicle fleets and vehicle design
- vehicle purchase standards
- Intelligent Transportation Systems technology
- driver training
- driver performance monitoring
- roadside and road design
- integrated traffic safety technologies
- scene safety and visibility
- safety data capture
- safety oversight

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For the transportation folks...

Why is EMS Transportation Safety a focus

- Data state that per vehicle and per mile travelled high fatality rates
- Driven by drivers overrepresented in high risk group: under 25 years of age/male
- Designed outside of the automotive safety and occupant protection arena
- Dangerous driving practice: Travel at high speed and run red lights

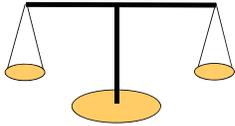
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Yet....

- In less than 3% of transports is it a life threatening emergency

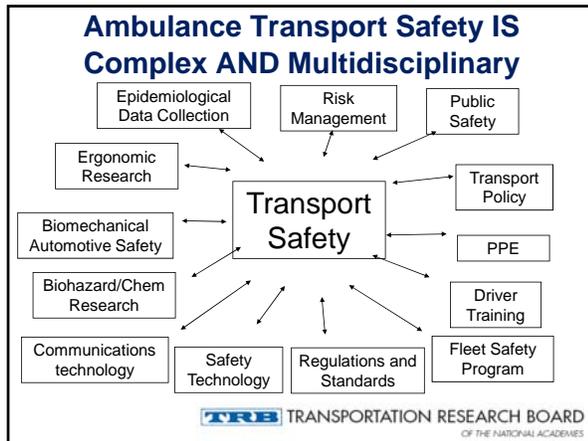
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Balance of concerns and risk during transport



- Response and transport time
- Clinical care provision
- Occupant safety/protection
- Public Safety

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Negative impact on system performance...

- A medical error may kill a patient
BUT
- An EMS crash can kill all those involved AND wipe out a rural EMS system AND negatively impact a regions response capacity.....

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USA EMS transport safety data estimates

includes police report data* and estimates based on known data capture deficiencies

- ~ 81,000 vehicles
- upto 9,000 crashes a year
- ~ One fatality each week
 - ~ 2/3 pedestrians or occupants of other car
- ~10 serious injuries each day
 - >50% not ambulance occupants
- Cost estimates > \$500 million annually

*FARS/GES 2014 - <http://www.nhtsa.gov/Files/HealthSafety/2014/20NHTSA%20Ground%20Ambulance%20Crash%20Data.pdf>

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Ambulance transport a serious USA transport safety problem...

- the most lethal vehicle on the road both per mile travelled and per vehicle
- is exempt from federal commercial fleet safety oversight (FMCSA)
- 2/3 fatalities not in the ambulance
- More than half injuries are not in the ambulance
- Exempt from most FMVSS standards

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In the USA there are more safety standards for moving cattle than for moving patients

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Follow hashtags #TRBEMS16, #ANB10(5), #EMSSafety on twitter!

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Breaking down the silos between:

- EMS practice
- Automotive occupant protection
- Fleet management
- Human factors and ergonomics
- New technologies in monitoring, communication
- Interoperability
- Fragmented oversight

Twitter



This morning's meeting

- Will cover:
 - Review of TRB EMS Safety Subcommittee's activities
 - An overview of the TRB and opportunities for EMS
 - Research funding pathways via the TRB
 - National updates
 - Research Needs/Problems/Statements

The TRB and EMS

- **TRB Mission:**
To provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multi modal.
- Provides service to government, public, and scientific and engineering communities.
- **TRB Goals:**
 - Being prepared for challenges.
 - Conduct and promote knowledge.
 - Provide timely and informed advice.
 - Act as an effective and impartial forum.
 - Promote collaboration.
 - Contribute to the professional development
 - Conduct and promote communications efforts.
 - Contribute to public's understanding.
 - A resource to the nation and to the transportation community worldwide

What is ANB 10 (5)?

- ▶ Emergency Medical Services Safety Subcommittee, ANB 10 (5)
 - Subcommittee of the Transportation Safety Management Committee ANB 10, of the Transportation Research Board of the National Academies

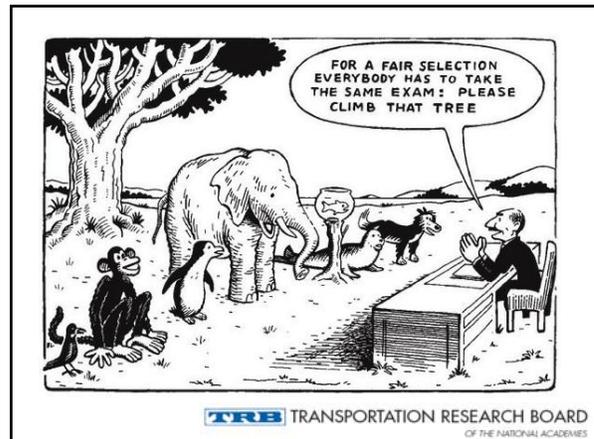
EMS Safety Subcommittee ANB10(5)

- Subcommittee supported by Transportation Safety Management ANB10
- Established July 2007
- First Subcommittee meeting – Jan 2008
- Chair, Nadine Levick MD, MPH
- Co-Chair, Eileen Frazer, RN
- Scope – Medical Transport Safety

Multidisciplinary research

- Encompassing all aspects of transportation
- The expertise that EMS needs to address its transportation safety challenges includes:
 - Systems design
 - Transport systems safety
 - Human factors
 - Vehicles
 - Fleet operations
 - Air medical transport safety
 - Managing impaired operators
 - Road design and egress and access
 - Highway and operational hazards

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Fragmentation

- There are now numerous and variably sound or technically sophisticated events occurring sporadically on ambulance safety – none under a transportation umbrella

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ANB10 (5) TRB EMS Subcommittee Mission

- *'Bridging the gap between what we do and what is known - Enhancing ambulance transport safety through shared knowledge of technical data'.*

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Integration

- ANB10(5) is an independent platform for:
- Bringing fragmented information together
 - Uniting diverse disciplines
 - Focus on technically robust information

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The Transportation Research Board (TRB)

- History
TRB was established in 1920 as the National Advisory Board on Highway Research to provide a mechanism for the exchange of information and research results about highway technology.

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TRB MISSION

- To provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal.

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TRB divisions

- Technical Activities supports standing committees and task forces.
- Studies and Special Programs convenes specially appointed expert committees to conduct policy studies and program reviews, maintains the TRIS database, provides library services, prepares synthesis reports on behalf of the Cooperative Research Programs, and manages the Innovations Deserving Exploratory Analysis (IDEA) programs.

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TRB research programs

- Cooperative Research Programs manages
 - National Cooperative Highway Research Program - NCHRP
 - Transit Cooperative Research Program - TCRP
 - Airport Cooperative Research Program – ACRP
 - National Cooperative Freight Research Program - NCFRP
 - Hazardous Materials Cooperative Research Program - HMCPRP
- Strategic Highway Research Program 2 (SHRP-2)
 - manages a targeted, short-term, results-oriented program of contract research designed to advance highway performance and safety for U.S. highway users.
- Administration and Finance provides financial, information technology, and other administrative support, including financial oversight of the contracts and grants that support the work of TRB, administration of publications sales and distribution, and maintenance of benefits and services for sponsor and affiliate organizations.

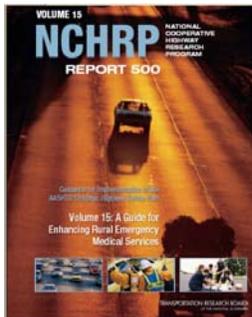
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Special role for EMS at TRB

- One of the Key 4 E's
 - Engineering
 - Education
 - Enforcement
 - Emergency Medical Services**

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Transportation Research Board is an excellent resource... we should be using it!!



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Emergency Medical Services Response to Motor Vehicle Crashes in Rural Areas
<http://www.trb.org/Main/Blurbs/169523.aspx>



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In Summary TRB Services

- A resource to the nation and to the transportation community worldwide
 - Opportunities for information exchange on current transportation research and practice
 - Management of cooperative research and other research programs
 - Analyses of national transportation policy issues and guidance on federal and other research programs
 - Publications and access to research information from around the world.

Who is attending the 95th TRB meeting

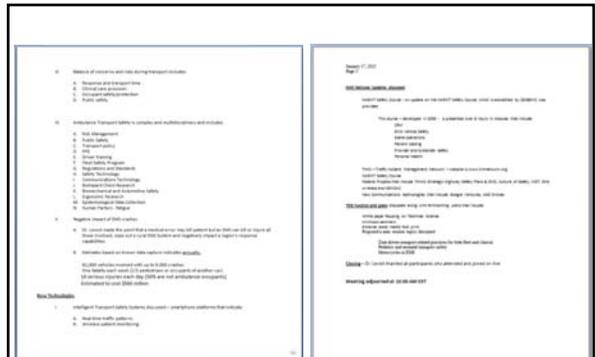
- >13,000 transportation related researchers and technical personnel from all over the globe

3.1 Introductions

3.2 Review and Approval of Minutes from 2015

ANB10(5) Jan 2015 Subcommittee Meeting Minutes

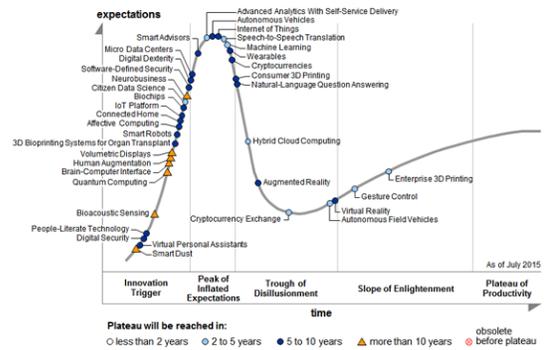
www.EMSSafetyFoundation.org/TRBJan2015MeetingMinutes.pdf



This years TRB theme - “Research Convergence for a Multimodal Future”

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Gartners 2015 Hype Cycle



KDD 2015

<http://www.kdd.org/kdd2015/>

KDD2015 Call for Abstracts Program Messages Tables Sponsorship Questions Blog KDD15

ACM SIGKDD Conference on Knowledge Discovery and Data Mining

OpenTOC for the KDD2015 Proceedings

KDD 2015 Program Chair Report

KDD 2015 Program

4 Keynotes

KDD-2015 Call for Participation

KDD 2015 Job Match Program

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Predicting Ambulance Demand: a Spatio-Temporal Kernel Approach

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ABSTRACT

Predicting ambulance demand accurately at fine time and location scales is critical for ambulance fleet management and dynamic deployment. Large-scale datasets in this setting typically exhibit complex spatio-temporal dynamics and sparsity at high resolution. We propose a prediction method using spatiotemporal kernel density estimation (KDE) to address these challenges, and provide spatial density predictions for ambulance demand in Toronto, Canada as it varies over hourly intervals. Specifically, we weight the spatial basis of each historical observation by its informativeness for the current prediction task. We construct spatio-temporal weight functions to incorporate various temporal and spatial patterns in ambulance demand, including location-specific seasonality and short-term serial dependence. This allows us to draw out the most helpful historical data, and exploit spatiotemporal patterns in the data for accurate and fast predictions. We further provide efficient estimation and reasonable prediction procedures. KDE is easy to use and interpret by non-specialized personnel from the emergency medical services industry. It also has significantly higher statistical accuracy than the current industry practice, with a considerable amount of computational expense.

Categories and Subject Descriptors

H.2.3 [Database Management]: Database Applications—Data Mining; G.3 [Probability and Statistics]: Stochastic processes

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Big Data and Mobile Health

U.S. Department of Health & Human Services

NIH National Institutes of Health
Office of Behavioral and Social Sciences Research

Home » Scientific Areas » Methodology » Research » Big Data Opportunities and Challenges in Mobile Health (KDD 2014)

Big Data Opportunities and Challenges in Mobile Health (KDD 2014)

Workshop Agenda
Invited Speakers
Program Committee
Registration

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SFGate News Sports Business A&E Food Living Travel Columns

If only Uber operated an ambulance service ...

Andrew S. Ross
Updated 10:22 am, Monday, August 25, 2014

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From our very first Subcommittee meeting

- facilitating translation of relevant related transportation safety research and knowledge to EMS

Safe Systems Approach

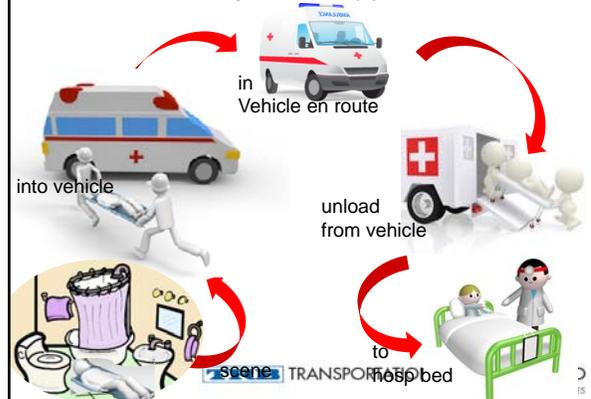


Source: Road Safety Branch, Infrastructure and Surface Transport Policy, Department of Infrastructure, Transport, Regional Development and Local Government, Australia.

Systems safety of:

- Dispatching a vehicle
- Getting you, your patient and equipment to, in and out of the vehicle
- Providing patient care inside the vehicle
- Occupant protection in crash and near miss situations
- Public safety

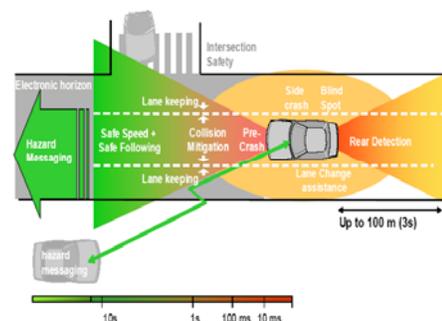
Safe Systems Approach



System Design Constraints

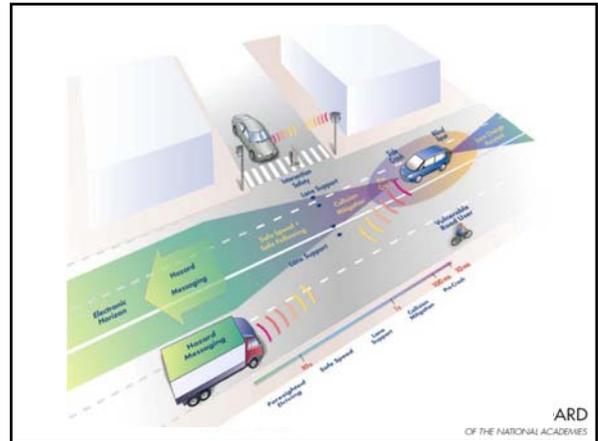
- Do the clinical work that is required and essential
- Not get hurt or killed
- Not hurt or kill anyone else
So...
- Clinical need
- Human tolerance of injury

Intelligent Transport Safety Systems



The connected and driverless vehicle...

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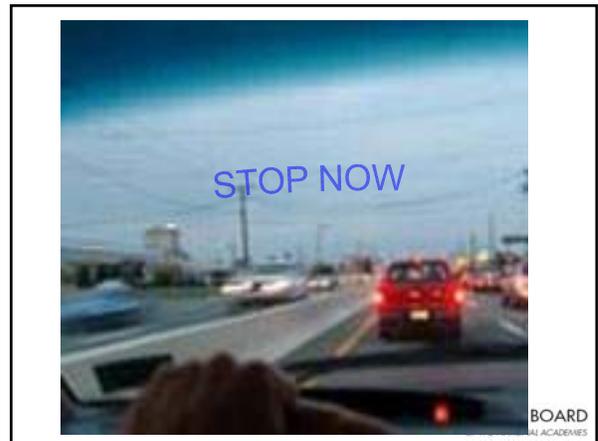
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DriveSafe GLASS Home Add To Glass The Team Contact

An app to help you be a safer driver, exclusively on Google Glass.
"OK Glass, Keep me awake."

ALERT
It appears you are falling asleep

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From Wired August 2014

This \$500 Display Makes Your Junker Car Feel Like a Fighter Jet

BY ALEXANDER GEORGE 08/25/14 | 12:00 PM | PERMALINK

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TRB Resources and Structured Transportation Research Programs

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TRB Resources

Resources and Databases

TRB maintains a number of databases and other resources designed to help researchers identify existing, ongoing, needed, and potential areas for fund webinars and recorded sessions that are available for download.

Webinars and Conference Recordings

TRB webinars provide transportation professionals a conference-like atmosphere to share and receive information, while remaining in the comforts of their sessions from our Annual Meeting, and topics requested by TRB committees.

Research in Progress (RiP) Database

The Research in Progress (RiP) database contains more than 8,400 current or recently completed transportation research projects. Most of the RiP research transportation research is also included. The RiP Database now serves as a clearinghouse of University Transportation Centers ongoing research. The U.S. Department of Transportation, and University Transportation Centers to add, modify and delete information on their current research projects.

Research Needs Statements (RNS) Database

An important function of the Transportation Research Board is to stimulate research that addresses concerns, issues, or problems facing the transportation committees identify, develop, and disseminate research need statements for use by practitioners, researchers, and others.

TRID, the TRIS and ITRD Database

TRID is a newly integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and the OECD (ITRD) Database. TRID provides access to over 900,000 records of transportation research worldwide.

Practice Ready Papers (PRP) Database

Each year standing committees in the Technical Activities Division identify peer-reviewed papers that could be of potential interest to practitioners as well as discussed make a contribution to the solution of current or future problems or issues for practitioners. Information presented in these papers is ready.

Transportation Research Thesaurus (TRT)

The Transportation Research Thesaurus (TRT) is a tool designed to improve the indexing and retrieval of transportation information. The thesaurus covers consistent language between producers and users of transportation information.

Online Directory

The TRB Online Directory allows you to browse or selectively search through TRB's committee structure to find detailed information on committees, included in the directory are standing committees, project-based committees, and TRB governing committees.

Library

The TRB Library is the primary archive for publications of the Transportation Research Board, Highway Research Board, Strategic Highway Research P to TRB staff, sponsors, TRB committees and panels, and researchers.

Research Funding

TRB's Funding Sources for Transportation Research: Competitive Program is designed to help researchers identify potential organizations where they fit.

TRID <http://trid.trb.org/> the TRIS and ITRD

Transportation Research Information Services (TRIS)

- Online Research Information
- TRB produces and maintains the Transportation Research Information Services (TRIS), the world's largest and most comprehensive online bibliographic database of published and ongoing transportation research.
- Through a cooperative agreement with the Bureau of Transportation Statistics, the TRIS Database is available on the Internet through the website of the National Transportation Library. This service, TRIS Online, can be accessed through the TRB homepage at www.TRB.org. TRIS is also available through two fee-based services, Dialog and Silverplatter's TRANSPORT CD-ROM.

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Other TRB Online Resources

- Research in Progress (RiP) Database
- RiP provides access to more than 10,000 descriptions of current or recently completed transportation research projects from federal and state transportation agencies, universities, and international organizations
- The TRB Publications Index is a searchable index of the Board's papers and reports.

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RiP <http://rip.trb.org/>

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Synthesis Program

- Reports on current knowledge and practice
- Synthesize fragmented, scattered, and unevaluated existing information
- Initiation of ~ 12 syntheses per year
- Selection process for synthesis topics:
 - widespread enough to generate broad interest
 - timely and critical for expediting delivery, improving the quality, or lowering the cost of transportation programs
 - current practice is non-uniform or inconsistent from agency to agency, or if the validity of some practices appears to be questionable
 - a need to organize and compress that which has already been learned and written on the topic
 - ongoing research or other activities in progress should not render the synthesis obsolete shortly after completion

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<http://www.trb.org/Studies/Synthesis/SynthesesNCHRP.asp>
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National Cooperative Highway Research Program (NCHRP) Synthesis

- New NCHRP Synthesis topics submissions due February, 2016

Strategic Highway Research Program (SHRP 2)

- Congress established the second strategic highway research program (SHRP 2) in 2006 to investigate the underlying causes of highway crashes and congestion in a short-term program of focused research. Focus areas:
 - **Safety:** Significantly improve highway safety by understanding driving behavior in a study of unprecedented scale
 - **Renewal:** Develop design and construction methods that cause minimal disruption and produce long-lived facilities to renew the aging highway infrastructure
 - **Reliability:** Reduce congestion and improve travel time reliability through incident management, response, and mitigation
 - **Capacity:** Integrate mobility, economic, environmental, and community needs into the planning and design of new transportation capacity

IDEA Program

Research Approaches

- Submission avenues:
 - Synthesis topic - NCHRP
 - SHARP 2 – Safety
 - Research questions/Problem statements

Sample Research Question

TEMPLATE AND EXAMPLE

Title

The purpose of the study is to explore roadway engineering improvements that can be implemented to reduce drunk driving crashes. It is generally accepted that most DWI crashes are behavioral in nature, one or more drivers being intoxicated with alcohol or other drugs. Yet, studies on the locations of DWI crashes do find specific locations where a disproportionate number of such crashes occur. The purpose of the study will be to identify potential roadway engineering improvements that could reduce DWI crashes, including changes in roadway geometry, signage, signage, creation of obstacles to slow drivers, automated detection systems for erratic driving, adaptive signals to slow vehicles, and other roadway technologies.

The research study will accomplish three tasks. First, the researcher will review the literature on engineering features to identify possible improvements and roadway technologies that could reduce DWI crashes. Second, the researcher will conduct interviews with knowledgeable individuals about each of the technologies, to explore benefits, problems and potential costs. Third, the researcher will produce a report comparing the technologies and will estimate the likely benefits and costs of each of the technologies and will produce a prioritization.

Objective

The objective is to increase the range of tools available for departments of transportation and public works and local police to reduce DWI crashes.

Key Words

Safety engineering, DWI, Behavior modification

Related Work

Studies have been conducted that demonstrate concentrations of DWI crashes (at spots). There is a long history on mitigating crash hot spots. Implementing improvements could reduce DWI and other behavioral-induced crashes.

RD
EMES

Very important. This study is very important because drunk driving is the major cause of motor vehicle fatalities in the United States which, in turn, places a huge cost on our society, both monetary and in terms of the public good.

Cost

\$75,000 - \$125,000

User Community

FHWA, NHTSA, ITE, AASHTO, AMPO, NARC, IACP, USDOT, NJ

Implementation

The study will involve a literature review, interviews with experts, and a conceptual evaluation.

Effectiveness

This would be a first step in identifying new or overlooked technologies that could reduce DWI crashes.

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ANB10(5) Umbrella Committee is ANB10 Transportation Safety Management

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How do TRB Subcommittees work?

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RNS RESEARCH NEEDS STATEMENTS

SEARCH

SEARCH FIELD: [] SEARCH TYPE: []

SUBJECT CATEGORY: []

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DETERMINATION OF EXISTENCE OF A RAILROAD EMERGENCY VEHICLE CRASH DATA CAPTURE AND ANALYSIS POLICY, FIRE AND EMS

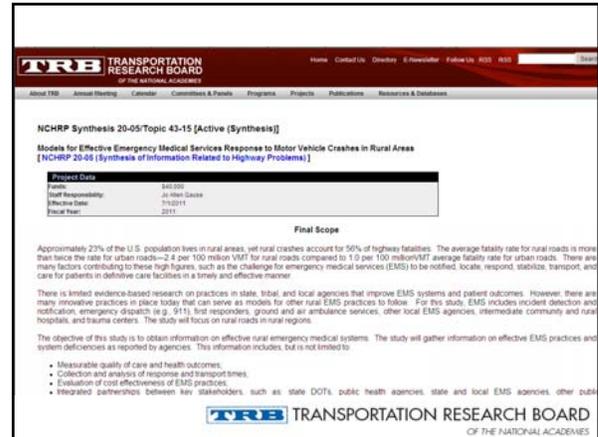
- PROBLEM TITLE**
Description of current data based emergency vehicle crash data capture and analysis, police, fire and EMS.
- RESEARCH PROBLEM STATEMENT**
To determine the extent of these three types of emergency vehicle crash data and to determine the extent of the 10 states... (text continues)
- OBJECTIVE**
To identify the railroads currently engaged in such efforts to include a fire, emergency and other disaster mitigation products that are required to be used by this particular research. Knowledge transfer.
- RESEARCH PROPOSED**
Provide a statement of the specific research proposed, how it relates to the general problem statement in Section II and, if possible, the research approach and the tools developed.
- ESTIMATE OF THE PROBLEM FINDING AND RESEARCH PERIOD**
Recommendation: Provide an estimate of the time necessary to complete the objective stated in Section II. As a RNS project, the project will be completed by the end of the calendar year 2010. The project will be completed by the end of the calendar year 2010. The project will be completed by the end of the calendar year 2010.
- URGENCY AND PAYOFF POTENTIAL**
Includes a statement regarding the urgency of this particular research. Identify and, if possible, quantify the potential and magnitude of possible benefits to the project objectives, their realization, actual, or environmental benefits to implementation of the proposed research products should also be identified.
- RELATIONSHIP TO FTA STRATEGIC GOALS AND POLICY INITIATIVES AND NRCP STRATEGIC PRIORITIES**
Compare the problem statement using the FTA strategic initiatives and the NRCP Strategic Priorities.
- RELATED RESEARCH**
If available, provide information on other research completed, in progress, or pending that is closely related to the proposed research.
- PERSONS DEVELOPING THE PROBLEM**
Provide the specific (i.e., name, title, address, telephone, fax and e-mail) for the person(s) who developed the problem.
- PROCESSES USED TO DEVELOP PROBLEM STATEMENT**
The RNS Subcommittee team discussion and analysis.
- DATE AND FORWARDED BY**
Provide the specific (see Section II) of the person(s) who submitted the problem and the date of submission.

Submitted by: Christopher W. Janki
Transportation Research Board
101 Fifth Avenue, N.W.

ARD
ADEMES

Problem statement development in progress from 2008-2015

- Development and application of standardized definitions to capture EMS transport data across all agencies.
- Identifying ambulance fleet mix by state
- Determination of current state based emergency vehicle crash data capture and analysis; police, fire and EMS.
- Identifying the regional essential and optional equipment payload for ambulances
- Evidence for ambulance visibility and conspicuity
- Effectiveness and cost effectiveness of real time driver monitoring feedback devices for EMS services



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About TRB Annual Meeting Calendar Committees & Panels Programs Projects Publications Resources & Databases

NCHRP Synthesis 20-05/Topic 43-15 [Active [Synthesis]]
Models for Effective Emergency Medical Services Response to Motor Vehicle Crashes in Rural Areas
[NCHRP 20-05 [Synthesis of Information Related to Highway Problems]]

| | |
|----------------------|---------------|
| Project Date | 04/2008 |
| Period | 18 mos. Study |
| Staff Responsibility | TRB/DTIT |
| Effective Date | 2011 |
| Final Year | 2011 |

Final Scope

Approximately 27% of the U.S. population lives in rural areas, yet rural crashes account for 50% of highway fatalities. The average fatality rate for rural roads is more than twice the rate for urban roads—2.4 per 100 million VMT for rural roads compared to 1.0 per 100 million VMT average fatality rate for urban roads. There are many factors contributing to these high figures, such as the challenge for emergency medical services (EMS) to be notified, locate, respond, stabilize, transport, and care for patients in definitive care facilities in a timely and effective manner.

There is limited evidence-based research on practices in state, tribal, and local agencies that improve EMS systems and patient outcomes. However, there are many innovative practices in place today that can serve as models for other rural EMS practices to follow. For this study, EMS includes incident detection and notification, emergency dispatch (e.g. 911), first responders, ground and air ambulance services, other local EMS agencies, intermediate community and rural hospitals, and trauma centers. The study will focus on rural roads in rural regions.

The objective of this study is to obtain information on effective rural emergency medical systems. The study will gather information on effective EMS practices and system deficiencies as reported by agencies. This information includes, but is not limited to:

- Measurable quality of care and health outcomes;
- Collection and analysis of response and transport times;
- Evaluation of cost effectiveness of EMS practices;
- Integrated partnerships between key stakeholders, such as state DOTs, public health agencies, state and local EMS agencies, other public

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NCHRP 17-51 FRAMEWORK PROJECT
PUBLIC PROJECT WEBSITE

Home About Interim Topics Resources Submit research ideas Comments Contacts FAQs

ABOUT THE PROJECT
09/16/2011

Background: Project Objective 1: The Project Team

Background

Over the last ten years, more than 470 thousand people died on public roadways in the United States. Motor vehicle-related crashes remain one of the leading causes of death, causing the loss of 16,000 lives through 100,000 injuries. The annual societal cost of crashes is estimated at \$220 billion (NHTSA, 2010). The burden on medical resources is also high; in 2009, nearly 3.5 million people were taken to hospitals sustained in motor vehicle-related crashes (Zhuo, Lu, and Shetty, 2010). Motor vehicle crashes are the leading cause of traumatic injury and death in the U.S., and 14% (Covinsky, 2008) and the leading cause of hospital stays (NHTSA, 2010) related deaths (Farr et al., 2010).

Highway deaths were first recognized as a national problem in the 1950s, and efforts to reduce highway deaths were undertaken in the 1960s. The industry strategy requires states that use METS (METS) legislation were among the agencies addressing the problem. Implementation of short-term, low-cost countermeasures and investments in safety programs have had a demonstrated positive effect on death levels. This reduction in fatalities since 2000 is widely credited to the implementation of safety-related programs in highway safety, which have been implemented. The implementation of safety-related programs in highway safety, which have been implemented, are not likely to impact the reduction of the downward trend observed over the last few years. This is because road conditions are

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WEBINARS

DISCLAIMER

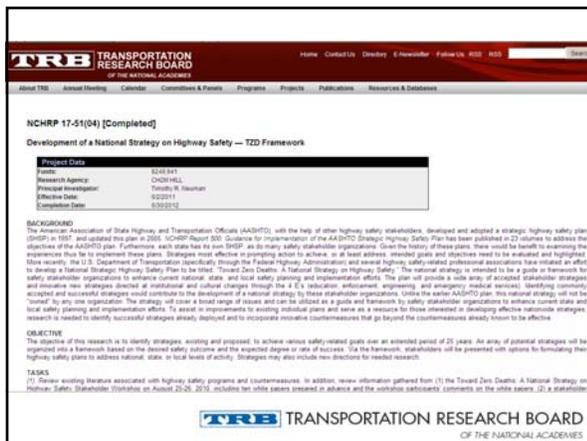
INTERIM TOPICS

- Safety Culture
- Design
- Infrastructure Road Users
- Vehicle Passengers
- Vehicles
- Infrastructure and the Physical Environment
- Emergency Medical Services
- Law Enforcement and the Legal System
- Data, Info. Systems, and Access Issues

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NCHRP 17 - 51

- The Framework developed by NCHRP 17-51 will be a tool that Stakeholders can use to formulate their Highway Safety Plans which integrate EMS, at the National, State, or Local Level. More information about the Framework Project is available at: <http://www.strategicsafetyplan.com>



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NCHRP 17-51(04) [Completed]
Development of a National Strategy on Highway Safety — TZD Framework

| | |
|------------------------|--------------------|
| Project Date | 01/2011 |
| Period | 18 mos. |
| Research Agency | CDCH/HL |
| Principal Investigator | Timothy B. Reardon |
| Effective Date | 02/2011 |
| Completion Date | 03/2012 |

BACKGROUND

The American Association of State Highway and Transportation Officials (AASHTO), with the help of other highway safety stakeholders, developed and adopted a strategic highway safety plan (SHSP) in 1997 and updated the plan in 2005. NCHRP Report 500: Guidance for Implementation of the AASHTO Strategic Highway Safety Plan has been published in 23 volumes to address the objectives of the SHSP plan. Furthermore, each state has its own SHSP. As many safety stakeholder organizations' view the history of these plans, there would be benefit to examining the experience that led to implement these plans. Strategies most effective in promoting action to achieve, or at least address, intended goals and objectives need to be evaluated and highlighted. More recently, the U.S. Department of Transportation specifically through the Federal Highway Administration and several highway safety-related professional associations have initiated an effort to develop a National Strategic Highway Safety Plan to be titled "Toward Zero Deaths: A National Strategy on Highway Safety." The national strategy is intended to be a guide or framework for safety stakeholder organizations to enhance current national, state, and local safety planning and implementation efforts. The plan will provide a wide array of accepted, innovative strategies and innovative new strategies directed at institutional and cultural changes through the 4 E's (education, enforcement, engineering, and emergency medical services). Identifying, evaluating, and successful strategies would contribute to the development of a national strategy by these stakeholder organizations. Unlike the earlier SHSP plan, this national strategy will not be "owned" by any one organization. The strategy will cover a broad range of issues and can be utilized as a guide and framework by safety stakeholder organizations to enhance current state and local safety planning and implementation efforts. To assist in improvements to existing individual plans and serve as a resource for those interested in developing effective, innovative strategic research is needed to identify successful strategies already deployed and to incorporate innovative countermeasures that go beyond the countermeasures already known to be effective.

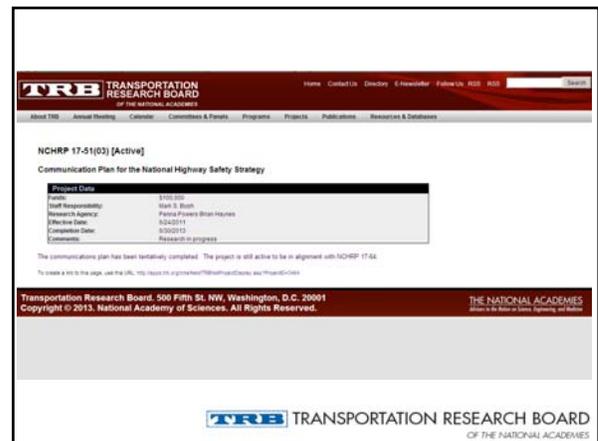
OBJECTIVE

The objective of this research is to identify strategies, existing and proposed, to achieve safety-related goals over an extended period of 25 years. An array of potential strategies will be recognized into a framework based on the desired safety outcome and the expected degree or rate of success. Via the framework, stakeholders will be presented with options for formulating their highway safety plans to address national, state, or local levels of activity. Strategies may also include new directions for needed research.

TASKS

(1) Review existing literature associated with highway safety programs and countermeasures. In addition, review information gathered from (1) the Toward Zero Deaths: A National Strategy on Highway Safety Stakeholder Workshop on August 21-23, 2010, including but not limited to papers presented in advance and the workshop participants' comments at the other events; (2) a stakeholder

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NCHRP 17-51(03) [Active]
Communication Plan for the National Highway Safety Strategy

| | |
|----------------------|-------------------------------|
| Project Date | 1/10/2011 |
| Period | 18 mos. |
| Staff Responsibility | Mark D. Bush |
| Research Agency | Patrick Powers Road Institute |
| Effective Date | 02/2011 |
| Completion Date | 03/2012 |
| Comments | Research in progress |

The communications plan has been tentatively completed. The project is still active to be in alignment with NCHRP 17-51.

To access a link to the page, see the URL: <http://www.trb.org/Research/StrategicData/CommPlan03>

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NCHRP 17-57 (Active)

Development of a Comprehensive Approach for Serious Traffic Crash Injury Measurement and Reporting Systems

| Project Data | |
|------------------------|------------------------|
| Funds | Grant 001 |
| Lead Responsibility | Mark S. Bush |
| Research Agency | University of Michigan |
| Principal Investigator | Donald O. Rapp |
| Effective Date | 9/22/2012 |
| Completed Date | 9/22/2014 |

BACKGROUND

Currently, severity of injuries is estimated by police on the scene of a traffic crash. A very simple rating scale is employed by many states or communities, i.e., the NHTCO injury scale or a comparable version. Basically, the police officer codes the overall level of injury each person receives as killed, incapacitating, non-incapacitating, possible, or no injury. Each of these levels has a definition and criteria for using. However, what the officer observes at a crash scene can often substantially vary what is found by medical personnel. The National Highway Traffic Safety Administration (NHTSA) facilitates the Crash Outcome Data Evaluation System (CODES). State CODES programs conduct a probabilistic matching of statewide health records with crash reports. However, a limited number of states are participating in this system, and the technical process is complex. Trying to connect police reports with any further medical outcomes or cost data can be technically difficult. Also, organizational and other barriers may exist for making such linkages within states. Performance measures are extensively referenced in draft proposals for the surface transportation reauthorization bill. For the measurement of safety performance, both fatal and non-fatal serious injuries are emphasized in these proposals. NHTSA and the American Highway Safety Association recently developed a series of safety performance measures that include use of fatalities and serious non-fatal injuries. The American Association of State Highway and Transportation Officials has also been working to develop similar performance measures. If serious non-fatal injuries and crashes are to become major performance measures for states, then an accurate and feasible method for determining level-of-injury severity based on a medical assessment is needed.

OBJECTIVES

The objectives of this research are to:

(a) Identify an injury scoring system for further consideration. Analyze the advantages and disadvantages of conventional injury scoring systems based on International Statistical Classification of Diseases and Related Health Problems (ICD) codes and NHTCO. Document advantages and disadvantages of various definitions for a serious injury metric. (b) Create a roadmap to assess states in developing and implementing an efficient system to measure and report injury severity using accepted injury scoring systems based on ICD codes. The start of the roadmap is to enable use of low-cost performance assessment by states using a scientific consensus. As a minimum, the consensus should consist of a scientific consensus to assess statewide crash and health outcomes data.

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3.3 Review of Subcommittee activities 2015

- EMS Today, 2015
 - INDEMO & Outreach with TRB Summit multimedia info
- EMS World Expo 2015
 - INDEMO & Outreach with TRB Summit multimedia info
- Input to NAEMSP Transport Safety Position Statement

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Subcommittee Meeting stats

Sure took us by surprise!

- >15,300 downloads of Subcommittee meeting handout
- >150,200 downloads of Synopsis of the 2012 Safety, Systems, Strategies and Solutions Summit handout
- >15,100 Fleet Tech Innovation handout
- >11,200 Standards Update handout

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The Safety Systems, Strategies and Solutions Summit Feb 2012

- ~50 onsite – lead representatives
- Live online participation with international representation
- 7 focus areas and a panel
- >150,000 downloads of presentation handouts
- Multi-Media 'e-document' with QR tags
- You tube overview

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EMS Safety Systems Strategies and Solutions Summit, February, 29, 2012

- What are global best practice models
- Making it happen
- How can we translate global interdisciplinary best practice initiatives to North American EMS

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2012 EMS Safety Systems, Strategies and Solutions Summit

<http://www.emssafetyfoundation.org/2012TRBSummitMultimediawithLinksBW.pdf>

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Your TRB EMS Safety Systems Strategies and Solutions Summit Multimedia Document

<http://www.emssafetyfoundation.org/2012TRBSummitMultimediawithLinksBW.pdf>



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2012 TRB Summit opening address

For the audio track either:
- click on the 'Audio' links below with your mouse, or
- capture the QR codes below with your smart phone of any type (after downloading any free QR reader)

Agenda
[Biosketches of Presenters and Moderators](#)

Audio 1
Opening Address: [A.J. Heightman](#) 8:00-8:15

Introductions and Safety Developments Update 8:15-8:30
[Nadine Levick, MD, MPH](#), Rick Pain, PhD,
[Research needs assessment forms explained – E. Frazer](#)

Session 1: Data and Recent Initiatives – moderator – C. Cobb - 8:30 – 9:15

- Safety data update - [N. Levick](#) 8:30 – 8:45
- Bureau of Labor Statistics data - [J. Windau](#) 8:45 – 8:55
- NTSB /NEMSAC/NIST/DHS Update – [E. Frazer](#) 8:55 – 9:10
- NAEMT Safety Course - [G. Luedtke](#) 9:10 – 9:15

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3.4 Sub-committee work program updates:

3.4.1 Ambulance Transport Safety Summit March 2017

3.4.2 Research Needs Statements - Research Topics Database

3.4.3 Administrative issues

- 3.4.3.1 Liaison organizations
- 3.4.3.2 TRB Changes/Communications/Website
- 3.4.3.3 Membership/Recruitment
- 3.4.3.4 2017 TRB Session Topics & Calls for Papers

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3.4 Sub-committee work program updates:

3.4.1 Ambulance Transport Safety Summit 2017

- Synopsis of 2008, 2009, 2012 Summit resources
- Focus on: A Road Map to Safety
 - Integrating existing data, knowledge and resources
 - A systems engineering approach to applying safety concepts
 - Data supported practices, policies and standards
 - Fleet operations/transport clinical aspects
 - New technologies
 - Fleets/vehicles/human factors/patient monitoring/communications

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3.4 Sub-committee work program updates:

3.4.2 Research Needs Statements - Research Topics Database

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Research Problem Statements

Developed 3 small and 2 larger project outlines

1. Data definitions of:

- i. ambulance
- ii. emergency response
- iii. ambulance crash

2. Essential/Optional Ambulance Equipment

What does each state require? Expert panel to identify -:

- i. essential equipment
- ii. optional equipment
- iii. equipment specific to regional needs

3. Fleet mix, by state



Research Problem Statements

2 larger project outlines

4. Effectiveness and cost effectiveness of EMS monitoring feedback devices

5. Determination of State based emergency vehicle data capture and analysis: police, fire and EMS



3.4.3 Administrative issues

3.4.3.1 Liaison organizations

3.4.3.2 TRB Changes / Communications / Website

3.4.3.3 Membership/Recruitment

3.4.3.4 2016 TRB Session Topics and Calls for Papers



ANB10 Committee

<https://sites.google.com/site/trbcommitteeanb10>

3.5 EMS National Updates

3.5.1 Standards developments in 2015

3.5.2 NAEMT Safety Course Update

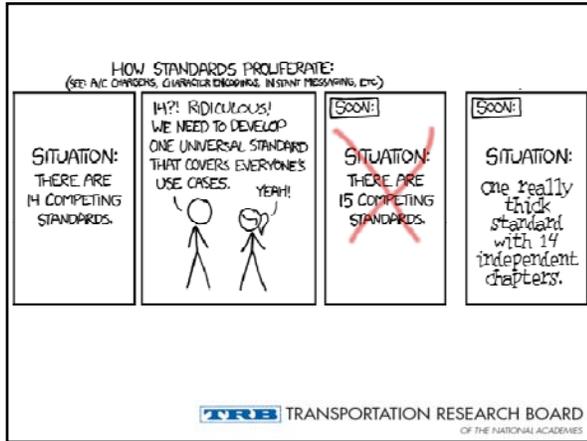
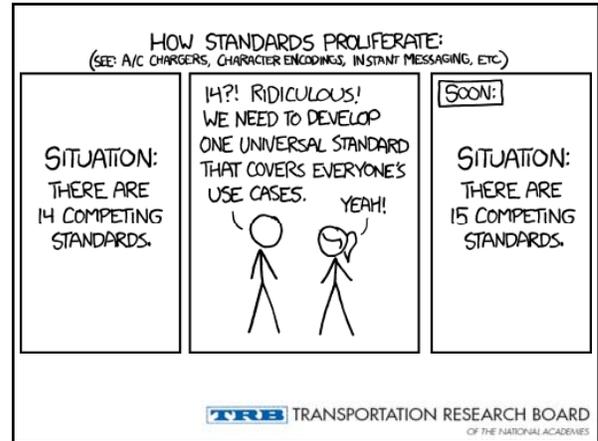
3.5.3 Federal Projects



3.5.1

2015 Standards developments





- ## Standards ?
- KKK
 - NFPA
 - SAE
 - ASTM 2020
 - NASEMSO MVDR
 - CAAS
 - CAMTS
 - FMVSS
 - FMCSA
 - State required ambulance equipment
 - And international CEN, ASA, India, Malaysia
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- ## GSA KKK
- A purchase specification - not a safety design standard
 - Sunset is extended to Oct 1, 2016
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Society for Automotive Engineers - SAE

The screenshot shows the SAE International website with a navigation bar and a main banner for the "SAE 2014 Commercial Vehicle Engineering Congress". The banner includes text about bringing together a global assembly of on- and off-road professionals and features forums, presentations, and discussions.

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For restraint systems – not vehicle design & not based on crashworthy vehicles

Testing Criteria – Frontal & Side Impact

SAE J2917- Ambulance Patient Compartment **Frontal** HYGE Sied Pulse, May 2010

SAE J2956- Ambulance Patient Compartment **Lateral** HYGE Sied Pulse, June 2011

ARD ADEIVES

Again, for equipment anchors, **NOT** vehicle crashworthiness

Testing Criteria – Rear Impact

Crash response of two vehicles used to develop new SAE Recommended Practice for Rear Impact Testing

SAE International SURFACE VEHICLE RECOMMENDED PRACTICE

CDC

WOSH BOARD OF ACADEMIES

SAE International Publishes Series of Technical Reports that Help Improve Ambulance Patient Compartment Safety

WARRENDALE, Pa., Aug. 27, 2014 -

With the recent publishing of four technical reports, SAE International now offers a series of recommended practices designed to enhance overall ambulance safety in several areas, including patient compartments and occupant restraint.

The four newly published recommended practices include:

- "J3026 – Ambulance Patient Compartment Seating Integrity and Occupant Restraint" – This SAE Recommended Practice describes the testing procedures that may be used to evaluate the integrity of ground ambulance-based occupant seating and occupant restraint systems for workers and civilians transported in the patient compartment of an ambulance when exposed to frontal or side impact.
- "J3027 – Ambulance Litter Integrity, Retention, and Patient Restraint" – This SAE Recommended Practice describes the testing procedures required to evaluate the integrity of a ground ambulance-based patient litter, litter retention system, and patient restraint when exposed to a frontal or side impact.
- "J3043 – Ambulance Equipment Mount Device or System" – This SAE Recommended Practice describes the dynamic and static testing procedures required to evaluate the integrity of an equipment mount device or system when exposed to a frontal or side impact (i.e. a crash impact).
- "J3044 – Occupant Restraint and Equipment Mounting Integrity – Rear Impact System-Level Ambulance Patient Compartment" – This SAE Recommended Practice describes the test procedures for conducting rear impact occupant restraint and equipment mounting integrity tests for ambulance patient compartment applications.

These recommended practices join two already existing ones, including "J2917 - Occupant Restraint and Equipment Mounting Integrity - Frontal Impact System-Level Ambulance Patient Compartment," and "J2956 - Occupant Restraint and Equipment Mounting Integrity - Side Impact System-Level Ambulance Patient Compartment."

**2014 New Organization in the field
CAAS Ground Vehicle Standard (GVS-2015)**
<http://www.groundvehiclestandard.org>

Home Ground Vehicle Standard About GVS Steering Committee Meetings About CAAS

Ground Vehicle Standard (GVS-2015)

The Commission on Accreditation of Ambulance Services (CAAS) is seeking public comment on its draft Ground Vehicle Standard (GVS-2015) for ambulances. The deadline for public comment is Monday, December 1, 2014.

The CAAS Ground Vehicle Standard (GVS-2015) identifies the minimum requirements for new ambulance Emergency Medical Services (EMS) ground ambulances built on Original Equipment Manufacturer's Chassis (OEM) that are prepared by the CAAS for use as an ambulance. This Standard applies to new vehicles only.

The CAAS Ground Vehicle Standard (GVS-2015) does not apply to the following vehicle categories:

- Military Vehicle/Combat Support Ambulances
- Off-road Class Vehicle/Transport Vehicles
- Motor Cycles, Vans/Motorcycles/ Scooters
- Institutional or Remounted Ambulances
- Fire Apparatus

The purpose of the CAAS Ground Vehicle Standard (GVS-2015) is to lend some patterns for providing ground ambulances that are safe, nationally recognized, properly constructed, well-maintained, and when professionally staffed and processed, will function reliably in pre-hospital or other mobile emergency medical service. The CAAS Ground Vehicle Standard (GVS-2015) establishes minimum equipment, performance parameters and acceptable criteria for the design of ground ambulances and to provide a practical degree of standardization.

Energy transfer is not a consensus process

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• **Opinion Consensus**

vs

Technical Science

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3.5.2 NAEMT Safety Course Update

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EMS SAFETY COURSE

National Association of
Emergency Medical Technicians



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Course Design

- One-day program
- Interactive lecture, discussion, group activities
- Case studies using real incidents
- 8 hours continuing education credit (CECBEMS)
- Presented in 8 modules

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EMS Safety Course Committee



Course Leadership



- Chairman, Mike Szczygiel (Segal)
 - Over 40 years experience in EMS
 - Nationally Registered Paramedic
 - Senior Loss Control Representative, Thomco Insurance
 - Part of the original design team for the EMS Safety Course

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Course Revision

- Revision completed
- Jones & Bartlett will produce all course materials
- Increased student participation
- Additional video and new photos
- Rolled out @ EMS World Expo
 - September, 2015
 - Las Vegas, NV
- Remains a one-day course

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 **NAEMT EMS Safety Course**

For more information on how to sponsor a course,

- ✓ go to www.naemt.org , click “EMS Safety”
- ✓ call 1-800-346-2368 (1-800-34NAEMT)
- ✓ email info@naemt.org
- ✓ visit “NAEMT EMS Safety” on Facebook

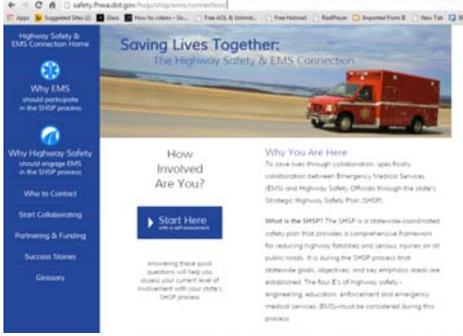
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3.5.3 Federal Projects

- FHWA Strategic Highway Safety Plans & EMS
- NIST/NIOSH/DHS
- DHS wireless
- NEMSAC

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<http://safety.fhwa.dot.gov/hsip/shsp/ems>



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NIOSH

Workplace Safety & Health Topics

EMERGENCY MEDICAL SERVICES WORKERS

NIOSH EMS Projects

Occupational injuries and illnesses among emergency medical services (EMS) workers

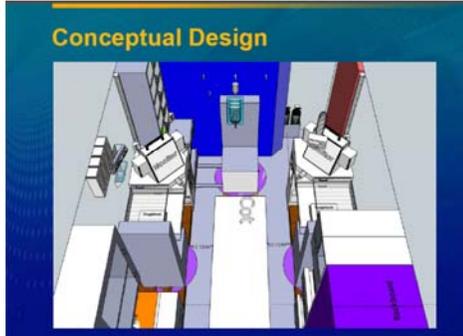
This is a collaborative project with the National Highway Traffic Safety Administration (NHTSA) Office of Emergency Medical Services. The purpose of this project is to conduct research to provide a detailed description of non-fatal occupational injuries and illnesses incurred by EMS workers, including the nature, circumstances, and outcomes of the injuries and illnesses and the characteristics of the injured or ill workers.

Project contact: Audrey Reichard
Division of Safety Research
(304)285-6019
Project period: 2009-2016

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NIST/NIOSH/DHS

Conceptual Design



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Automotive Safety & occupant protection remain unresolved, with serious automotive safety concerns



First Responders Group
 Second Draft Ambulance Patient Compartment Human Factors Design Guidebook
 April 30, 2014
 DHS SAT Logo

DHS Wireless Patient Monitoring



Project Roundup December
 What the SAT First Responders Group worked on in December 2013
 Every month, the U.S. Department of Homeland Security (DHS) Science and Technology Directorate (SAT) posts a roundup of key updates from projects currently in the development stages at the Department of Homeland Security (DHS) Science and Technology Directorate (SAT). This is the ninth article in the SAT Project Roundup series, outlining what SAT worked on in December.

Wireless Patient Vital Signs Monitoring
 On December 3 and 4, a group of emergency medical personnel, including emergency medical technicians, paramedics, a trauma nurse, and hospital physicians, conducted an operational field assessment of the DHS Wireless Patient Vital Signs Monitoring prototype at San Diego, California. The device, known as the Vital Signs Emergency Medical Response system, or VITALS, assesses the areas that connect physiological sensors to the instruments that monitor and display vital signs data. The assessment tested the technology in three emergency medical scenarios, including a simulated vehicle accident.

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TSAG
<http://www.tsag-its.org/>



Promoting Technology for Public Safety
 The Transportation Safety Advancement Group (TSAG) is an assembly of multi-discipline professionals sharing a common concern for transportation and public safety. TSAG serves as a forum for providing technologies for public safety input and guidance to the US Department of Transportation, ITS Joint Program Office. TSAG members are dedicated to enhancing traveler safety on our nation's roadways through the application of advanced technologies and the promotion of inter-discipline and inter-agency cooperation.

Working Together
 Through formal alliances with like interest counterpart organizations, the Transportation Safety Advancement Group will leverage its knowledge base and its operating resources to most effectively and efficiently pursue its promoting technology for public safety objective. With its allied partners, TSAG will work to advance the research dialogue and most importantly to propose and sponsor research and operator safety on our nation's roadways.

Projects
 ITS America invites proposals for the development of a White Paper on Emergency Vehicle Operator On-Board Device Distractions.
 Closes November 18, 2012 - The Transportation Safety Advancement Group (TSAG), in coordination with ITS America, seeks to publish a white paper that focuses on the acute and possible solutions to on-board device distraction in emergency response vehicles.

RD
ITS

2015 Tech events of interest

- from DHS
 - Emerge Program September 24 Conference
 - <http://www.dhs.gov/science-and-technology/accelerator>
 - Saver Program
 - Tweet chat #STTechtalk September 30
 - <http://www.firstresponder.gov/SAVER>
- Enterprise Wearable Tech Summit Oct 20-21
 - Twitter - #EWTS15
- NIH Digital Health Summit
 - <http://www.nih.gov/news/events/digital-summit.htm>
 - Preparedness tools presentation starts at 182 minutes

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Enterprise Wearable Technology Summit
 October 20-21, Houston



EWTS 2015
 Organized by **BRAIN CHANGE**

Enterprise Wearable Technology Summit
 THE LEADING EVENT FOR WEARABLE TECHNOLOGY IN ENTERPRISE
 October 20-21 at the U.S. Space and Rocket Center, Huntsville, Alabama

Meet Some Top Enterprise Wearable Tech Stars

- **Prepare for Wearables in the Enterprise**
 How data-driven wearables are being used to improve safety and productivity in the workplace.
- **Discover the True Potential of Wearable Tech**
 Explore the true potential of wearable technology. Compare wearables to other mobile technologies.
- **Learn how Wearables are Being Employed in Enterprises by Enterprises**

#EWTS15

Wednesday, October 21 • 10:45am - 11:15am

Case Study - The Incredible Impact of Wearable Technology in Emergency Services: The MedEx Story

Log in to save this event to your list and see who's attending!

- A Brief History - HIPAA Regulations, Training, IDPH Approval
- Partner Hospitals
- In the Field - Early Results
- MedEx in the News
- A Live Demonstration
- The Future

Speakers

Lauren Rubinson-Morris
 President & CEO, MEDEX AMBULANCE SERVICE
 Digital Profile & Bio

Emerge, San Fran

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<http://www.dhs.gov/science-and-technology/accelerator>

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Saver System Assessment and Validation for Emergency Responders

<http://www.firstresponder.gov/SAVER>

- #STTechtalk held Sept 30

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<http://www.firstresponder.gov/SAVER>

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NIH Digital Health Summit October 19th

- Elizabeth Jarrett, M.A., Office of the Assistant Secretary for Preparedness and Response (ASPR), HHS, and Stacey Arnesen, M.S., National Library of Medicine, NIH

“From Better Data to More Effective Tools: ASPR and NLM Collaborate to Create Resources that Promote Emergency Preparedness, Response and Recovery”

- <http://www.nih.gov/news/events/digital-summit.htm>
 - Preparedness presentation recording starts at 182 minutes

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www.PHE.gov/tools

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Back to the future.....

Heal expands doctor house call service to Silicon Valley with new fleet, mobile XRay service

For a company that wants to make it as easy to order a doctor as a pizza, registration and timing are critical. Heal, which provides an on-call service for people to request in-home visits from doctors for non-emergency pediatric and primary care, has added the Silicon Valley to its coverage area. It's part of a move to expand its doctor house call service to businesses and residences in the area and comes as the company prepares to add services such as prescription drug delivery by the end of the year.

In an interview with Heal co-founder Nick Desai, he talked about some of its safety protocols. For example, no doctor visits a home alone – they are accompanied and are driven by medical assistants. Keeping with the pizza theme, the medical assistants deliver doctors in one of its fleet of "Heal mobile." Also, if doctors don't feel comfortable with a neighborhood or the residence where the patient resides, they don't have to go. Desai said so far, it hasn't been an issue.

Its network of doctors average eight to 10 visits per day and so on when it's busy, depending on the complexity of each case, Desai added.

Over the summer it rolled out a mobile X-ray service through another company. Desai described it as an "express" service, something that customers wouldn't typically order unless it was for people with mobility problems where they need confirmation on whether someone has broken a bone or need an X-ray for another reason such as confirming pneumonia.

Registration Fees:
 Membership, Training and Printing: \$200.00
 One Day Registration: \$100.00
 Exhibit and Vendor Fee: \$100.00 (Cash/Check)
 Vendor Booths Available

Register at: milehighretc.org

Sponsorships:
 CEU's
 CEU's
 CEU's

Presented by:
 Colorado Department of Public Health and Environment (CDPHE)
 Emergency Medical and Trauma Services (EMTTS)
 State Emergency Medical and Trauma Advisory Council (SEM-TAC) Safety Committee
 Mile High Regional Emergency Medical and Trauma Advisory Council (EM-TAC)

Supporting Organizations:
 American College of Emergency Physicians (ACEP)
 American Medical Response (AMR)
 Colorado Emergency Services Association (CESA)
 Eagle County Paramedics Service
 National Association of EMS (NAEMT)
 National EMS Management Association (NEMSA)
 Center 7 Support Foundation

Have Questions?
 Contact Shirley Terry for all general questions on conference
 Shirley Terry, 800A, 4th
 Executive Director, SEM-TAC
 2302 South Juniper Way
 Lakewood, Colorado 80226
 Office: 303.722.8778
 Cell: 303.836.8778
 Email: shirley@sem-tac.net

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New Safety Certifications

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www.EMS.gov

NATIONAL EMS ADVISORY COUNCIL (NEMAC)
 Meeting Minutes and Materials

2013
 2012
 2011
 2010
 2009
 2008

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WHEN AMBULANCES CRASH
 EMS Provider & Patient Safety

4,500 EMS providers injured in crashes
34% of EMS providers injured in crashes were not restrained
33% of EMS providers injured in crashes were not restrained

84% OF EMS PROVIDERS IN THE "CRASH" HIGHLIGHTED WERE NOT RESTRAINED

ONLY 33% WERE SECURED WITH SHOULDER AND LAP RESTRAINTS
44% of providers were not secured with shoulder and lap restraints
61% of providers were not secured with shoulder and lap restraints
38% of providers were not secured with shoulder and lap restraints

SIT DOWN & BUCKLE UP!
 Save Your Patients. They Rely on You!

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4. Innovation/New Communication Technologies

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New Tech

- **36% of Google Ventures' investments in 2014 were in healthcare and life sciences.** Upping its funding in the sector from just 9% in 2013, the tech giant plans to continue exploring the area with an emphasis on big data next year. [Wall Street Journal](#)

- **Ambulance drones could be saving lives soon!** Earlier this year, the Netherlands developed a prototype that can deliver a defibrillator to a patient suffering a heart attack. Once it lands, the drone uses live stream video conferencing to connect emergency responders to people on the ground

And even now AED Drones!

Ambulance Drone Delivers Defibrillator by Air (VIDEO)
10/22/15 at 11:53 AM - 10/22/15



Automatic external defibrillators (AEDs) are now a common sight at airports and sports venues, but they're nowhere near to being ubiquitous. Alex Mommot, a graduate industrial design student at TU Delft University in Holland, developed a drone with a built-in defibrillator that can quickly fly exactly to where it's needed.



4.1 TRB 2016 EMS Papers

- **System-wide Impacts of Emergency Medical Service (EMS) Resources on Freeway Crash Severity**
Soyoung Jung, Hanyang University
Xiao Qin, University of Wisconsin, Milwaukee
Cheol Oh, Hanyang University - 16-2715 poster P282
- **Relationship Between Distance to Trauma Centers and Driver Mortality in Fatal Crashes Using FARS Data**
Wei Hu
Qiao Dong, University of Tennessee, Knoxville
Baoshan Huang, University of Tennessee, Knoxville - 16-4220 poster P292
- **Understanding the Impact of Accessibility and Weather on Emergency Unit Reaction Times**
Loukas Dimitriou, University of Cyprus
Constantinos Antoniou, National Technical University of Athens (NTUA)
Dimitrios Efthymiou, National Technical University of Athens (NTUA)
-16-3997 poster Q313

These papers/posters are to be presented today Jan 12, 2016 at ANB10 Transportation Safety Management

- And papers will be available via TRB TRIS

EMS Rollover presentation

- Wednesday Jan 13 @TRB



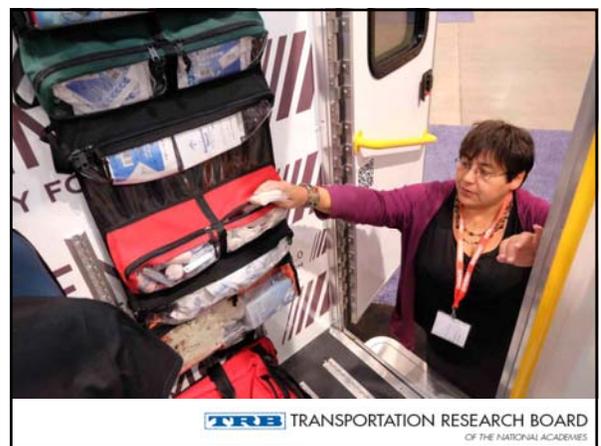
Self Guided INDEMO tour

INDEMO 1.0
YOUR SAFETY FOUNDATION

Your Self Guided Design Feature QR Code Tour

Schedule INDEMO? virtual or onsite scan this QR or go to link

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EMS World Expo LIVE Webinar

- “Live from Expo 2015” Webinar recording link
 - <http://www.emssafetyfoundation.org/amember/Protected/CTEP/Recorded2015Sept17LIVEfromEXPOICTEPWebinarlogininfo.htm>
- And Webinar Handout
 - <http://www.emssafetyfoundation.org/amember/Protected/CTEP/2015EMSSF-Sept17LIVEfromExpoHO.pdf>

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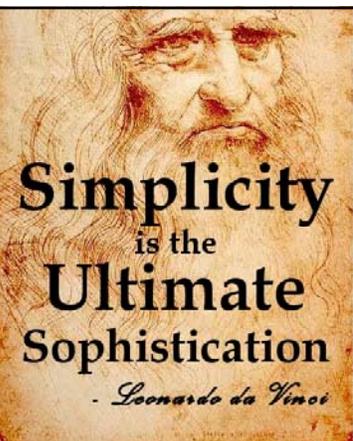
EMS Safety Foundation's new demonstration Project: **Ambulance Safety INDEMO 1.0**

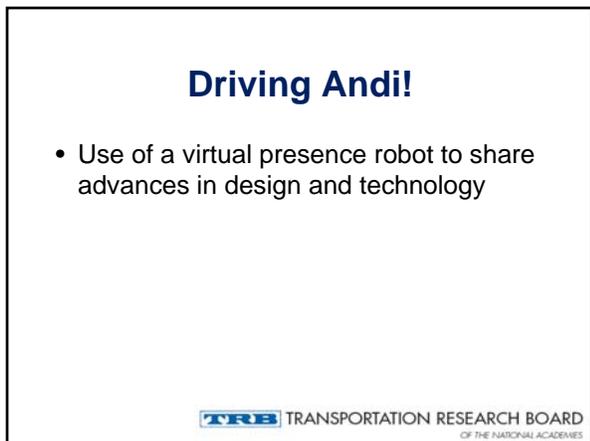
- Designs so that you can do your work with optimum safety and efficiency.
- Based on state of the art science, practice and input from the world's leading experts in automotive safety and human factors.
- Designs that are cheaper, better, safer.

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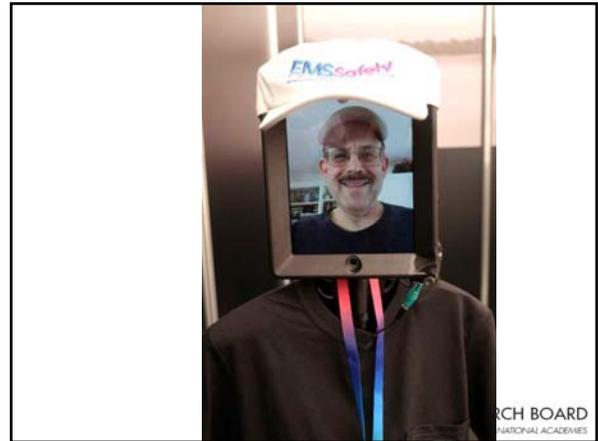
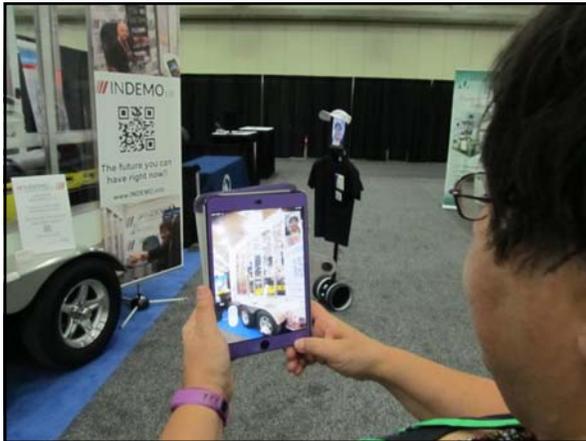


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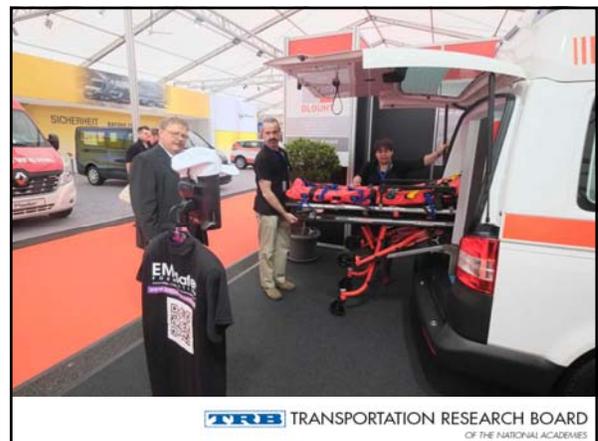
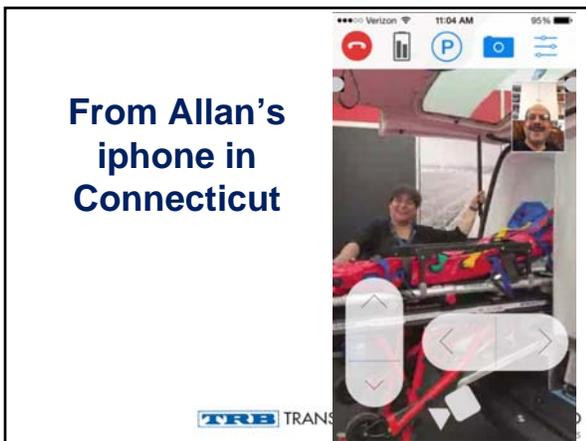




And even mobile Virtual presence



From Allan's iPhone in Connecticut



TRB ANB10(5) 2015



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4.3 Safety Emergency Transport of Neonatal Patients (SETONP) Preliminary White Paper

An outline document addressing key principles that will be the framework upon which the final guidelines will be developed

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Neonatal Transport System Safety Concepts White Paper release – October 2015

<http://www.emssafetyfoundation.org/prelimSETONP.pdf>
OPEN FOR PUBLIC COMMENT



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Safe Emergency Transport of Neonatal Patients – Phase I Project - (Funded by Medevac Foundation)

Specific aims:

- To determine key interdisciplinary technical data for design of a safe system for transport of neonatal patients.

Research hypothesis:

- Key technical data for neonatal transport safety design can be determined with an interdisciplinary team.

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SETONP Feedback

- comments1: The subject matter is very valuable, We need more information regarding the safe transports of Neonates, newborns and toddlers.
- comments2: Overall we need more technical advice and studies regarding EMS transport of Newborns/Toddlers and children.
- comments3: Devices to use, best practices, crash tests involving all the above and outcomes.
- general: I feel this is a paper that is long overdue, safety in transporting children should always be paramount.
- comments4: Safely securing Neonates/Newborns and toddlers for transport to ER's and other facilities.

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Safe Emergency Transport of Neonatal Patients – Phase II Project

- Expand on Phase I principles
- Create an educational and instructional video
- Disseminate this tool throughout the relevant disciplines

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NAEMSP 2016

January 14-16, San Diego
<http://www.naemsp.org/Pages/Annual-Meeting.aspx>

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EMS Today 2016

Feb 25-27, Baltimore <http://www.emstoday.com>

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HIMSS 2016

Feb 29-March 4, Las Vegas <http://www.himssconference.org>

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Rettmobil 2016

May 11-13, Fulda, <http://www.rettmobil.org>
www.EMSSafetyFoundation.org/Rettmobil2016interestForm.htm

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EMS World Expo 2016

OCT 3-7 2016
NEW ORLEANS LOUISIANA **REGISTER SOON!**

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Forthcoming ANB10(5) 2016 Plans:

- White paper focusing on Technical Science underpinning guidelines and standards
- Minitopic seminars
- Preparation for Safety Systems Strategies & Solutions Summit March 2017
- Enhance social media foot print

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Proposed mini session topics

- Data driven transport related practices:
 - Fleet
 - Clinical
- Pediatric/Neonatal transport safety
- Motorcycles in EMS

Sign up for ANB10(5) here...

<http://www.objectivesafety.net/TRBSubcommitteesignup.htm>



New Business

- New projects
- Task Force?

Any questions or comments?