Development and Implementation of an Interdisciplinary Emergency Medical Services (EMS) Transport Safety Innovation and Knowledge Transfer e-platform

Conflict of Interest Disclosure
- Research Director of the EMS Safety Foundation
  www.EMSSafetyFoundation.org
- CEO, Objective Safety
  www.ObjectiveSafety.net

Introduction
- Ambulance transport safety issues integrating patient, provider and the public, arch over numerous technical disciplines
- In contrast to clinical care, bridging the diverse technical disciplines involved in ambulance transport safety has had scant focus or formal infrastructure

Why now?
- Challenges of operating optimally in a transportation environment that is largely devoid of specific safety standards for the hazards and risks present
- Bridge the gap between what technical information exists and what is accessible and applied to EMS

Objective
- To design and implement a purpose developed platform for interdisciplinary knowledge to practice transfer in EMS transport safety

Methods
- End users were identified by having demonstrated proactive seeking of EMS safety technical information
- Global interdisciplinary technical expertise relevant to EMS safety identified by technical publication, both scientific and operational
- Communication platform via secure ‘Webinar’ technology with VOIP (Voice Over Internet Protocol) with focus on lean architecture, with small footprint

Goals
- The primary goals of bringing this unique group of folks together to:
  - Share pooled best practices
  - Integrate key technical expertise to address common challenges
  - Advance new multidisciplinary research projects
  - Translate safety technology from appropriate related technical areas to EMS
  - Knowledge transfer from research to practice

A practical and functional model
Interdisciplinary and Operational
  - Innovation
  - Collaboration
  - Knowledge transfer

Results
- An electronic virtual environment was established to create an end user driven forum, linked with technical expertise in knowledge transfer and spectrum of technical fields addressing EMS transport and systems safety.
- Launched March 2008, maintained by a management team - utilizing a free standing, user friendly interactive Webinar program.
- Established as a not for profit NGO
Results

- Operational on a small footprint with lean architecture and minimal infrastructure
- Initially North American, USA and Canada
- Its >320 participants includes:
  - End users: EMS, Medical Transport
  - Technical experts: a spectrum of disciplines
  - Corporate Partners

Structure

- Innovation Consortium
- Technical Expert Panel
- Advisory Board
- Operational Team
- Management Board
- Corporate Sponsors
- Corporate Partners
- Interns

Innovation Consortium

- Small volunteer rural EMS services
- Major metropolitan EMS services
- Private patient transport services
- State EMS Office
- EMS Associations
- Interns

Technical Expert Panel

- Transport engineering
- Automotive safety
- Ergonomics and human factors
- Occupational safety
- Patient Safety
- Public Safety
- New information technologies
- Data Management
- Risk Management
- Systems safety research
- Public health

Oversight and Support

- Oversight
  - Advisory Board
  - Management Board
- Support
  - Philanthropy
  - End user Membership Dues
  - Corporate Sponsors/Partners

The EMS Safety Foundation

At work online

Early Steps

End User needs
Knowledge gap analysis

End-User Key 5 Safety Priority Areas of focus

Relative Priority Issues

- Priority Number one
  - Vehicle ops - 29%
  - Ambulance design - 27%
- Priority Number two
  - Ambulance design - 35%
  - Vehicle ops - 29%
Big issues are

- Transport
  - Vehicle
  - Vehicle operations
  - Scene
- Patient handling
- Equipment
  - Protective and other

Results

- Interactive and interdisciplinary secure access Webinars held every 8 weeks
- Biannual workshops addressing topic areas identified as gaps in systems safety knowledge
- Annual international interdisciplinary best practice field trips conducted 3x
- Both real-time and asynchronous virtual platform access - 150,296 accesses overall from 10,031 distinct addresses.

Activities

- Interactive Webinars
  - Bi-monthly interactive Webinars, using the selected intuitive Elluminate Webinar platform
- Work Shops
  - Bi-annual technical workshops with both face to face and virtual participants
- International Field Trips
  - Annual interdisciplinary delegation, Innovation Consortium and Technical Expert Panel, Advisory Board and Interns to an international EMS congress
- Innovation Development

EMS Safety Foundation

2009 Webinar/Workshop Review

- January - Transferring Technical Knowledge to Operational Practice, New Developments, and 2009 Program
- March - Pediatric and Neonatal Transport Safety, International Approaches to Ambulance Design Specifications and Rettmobil Plans
- April - Live from Rettmobil & Workshop
- May - Part 1: Rettmobil 2009 Perspectives and Applications
- June - Part 2: Rettmobil 2009 Perspectives and Applications Follow up and Standards Update
- July - Concepts to Practice: Fleet Safety Economics, You and EMS: Regulations and Guidelines, the Workshop and Summit
- December - Workshop - Design and Operational Aspects of Patient Transport: Safety, Vehicle and Equipment
- December - Key Lessons from the Workshop and the Summit, and EMS Safety Foundation Developments for 2009-2010

EMS Safety Foundation RETTmobil 2008 Delegation

EMS Safety Foundation Delegation
brining Rettmobil to you: 2009

EMS Safety Foundation Workshop
May 2009 – Rettmobil, Germany
Lessons from 2009 Rettmobil Delegation

Loading Patients Without Breaking EMT Backs

“...Understanding what our goals should be and how to achieve them.”

Outcomes - 2009

Based on this interdisciplinary technical input, a fleet of prototype vehicles developed, have been manufactured and implemented, with also resultant advances in safety practice and policy put in place and operational.

Texas - CareFlite’s new vehicle

New vehicle Innovation - 2009

EMS Safety Foundation Rettmobil 2010 Delegation

EMS Responder Rettmobil 2010 Delegation

“Live from Rettmobil 2010” recording for public gratis access
Active Relationship with National Academies Transportation Research Board

EMS/ Medical Transport Safety Summit
November 7, 2008 & October 29, 2009
- Bridging the gap between what we do and what is known
- Technical expertise in data capture, transportation safety, vehicle safety, fleet management, human factors, standards development and EMS
- Enhancing ambulance transport safety through shared knowledge of technical data

Technical expertise in data capture, transportation safety, vehicle safety, fleet management, human factors, standards development and EMS

Enhancing ambulance transport safety through shared knowledge of technical data

October 29, 2009 TRB Summit

www.objectivesafety.net/TRBSummit2008.htm
www.objectivesafety.net/TRBSummit2009.htm

EMS Safety Foundation
Ambulance Vehicle & Ergonomics Workshop, October 2009

Automotive engineers addressing 2009 EMS Safety Foundation Workshop

EMS Ergonomist Chris Fitzgerald addressing 2009 EMS Safety Foundation Workshop

The science of stretcher lifting & loading

Stretcher Load - # 1 (ONLOAD01)
Applied and Operational Interdisciplinary Research
- Vehicle design
- Ambulance service fleet safety monitoring
- stretcher loading and unloading operations
- Neonatal ambulance occupant protection
- Effectiveness of knowledge transfer approaches
- Technology, bystander, provider and researcher interface in CPR/AED use

What is the result of the EMS Safety Foundation’s activities??
- Networking
  - Opportunities to build relationships with like-minded colleagues and technical experts across a spectrum of safety-related disciplines
- Innovation Community
  - A regionally diverse community of EMS services and providers all focused on the mission of innovation and information dissemination
- Collaborative Consortium
  - A unique opportunity to expand and optimize decision making, purchase approaches, and impact regional policy
- Implementation of Technical Design Innovation
  - Operational translation of technical knowledge into practice and vehicles

Conclusion
- Establishment of a sustained interdisciplinary forum for knowledge transfer to practice in EMS transport through a secure virtual access network has been achieved and demonstrated to be accessible to a spectrum of end users and has resulted in development of operational vehicle and policy innovation

www.EMSSafetyFoundation.org

Thank you!
Any Questions??
Electronic handout and resources available online
http://www.objectivesafety.net