American Public Health Association Meeting,
Washington, DC, November 5th, 2007
Politics, Policy and Public Health

Evaluating Occupational Safety Regulations - What works?:

Protecting those who care for us! Occupational Safety challenges for Emergency Medical Service transportation

Nadine Levick, MD MPH
Research Director, EMS Safety Foundation
CEO, Objective Safety
New York, NY

Overview

- EMS has been identified to be a dangerous profession
- Although the risks and hazards have been identified to be related primarily to the transportation/patient handling component of their occupation – there has been very little focus on this aspect in either training, policy or standards
- Major published texts, and educational curricula addressing Emergency Responder Safety - make only brief mention of these issues
- Existing occupational health and safety standards focus primarily instead on blood borne pathogens and biohazards.

Safety of transportation

- The transportation the component of EMS practice:
  - from the scene to the ambulance
  - in the ambulance (to and from the scene)
  - transporting the patient from the ambulance into the hospital environment
- There is limited transportation or ergonomic data on risk and hazard in each of these components, even though they appear to represent the major issues in EMS safety
- Scant relevant safety standards and oversight, if present at all, for the transportation or ergonomic aspects of EMS
- Gaps in risk and hazard data and the gaps which exist in standards yet to be defined

Thursday July 5th 2007……

NEWS CENTER

Paramedic Killed In Turner Ambulance Crash

Web Editor: Maureen O'Brien, Managing Editor
Created: 7/5/2007 8:43:07 AM
Updated: 7/5/2007 1:27:22 PM

TURNER (NEWS CENTER) -- The Med-Care paramedic was killed when the ambulance collided with a pickup truck on Route 4 in Turner at about 3:00 A.M. Thursday.

The Androscoggin County Sheriff's Department says the Med-Care ambulance had its emergency lights on when the pickup truck crossed in front of it.

The ambulance driver, 68-year-old Arlene Greenleaf of Bethel, and the driver of the pickup, 29-year old Christopher Boutin of Turner, were both injured and were taken to Central Maine Medical Center, as was the patient being carried in the ambulance.

The paramedic who died has been identified as 46-year old Allan Parsons of Wilton.

A section of Route 4 was closed to traffic for about five hours.

Several passers-by stopped to help the injured. Sheriff's investigators would like to speak with them. If you were on the scene of the crash, you are asked to call Detective Sgt. William Gagne at 1-800-492-0737, or 784-7361, ext. 214.

“…I’d like to know what can be done so this never happens again….”

Posted By:mad at July 5, 2007 4:38 PM (Suggest Removal)
to all the people worried about how fast the emt was going. would it be fast enough if it was your loved one in there.....

| **Add your comments**

Posted By:Concerned at July 5, 2007 4:49 PM (Suggest Removal)
To mad: It would be too fast if they ran over my family member on their way to another's family member...

| **Add your comments**

Posted By:Concerned at July 5, 2007 4:58 PM (Suggest Removal)
To X responder: Why can't I second guess this? A man is dead and I want to know if the actions and situation surrounding this were worth this sort loss. And I'd like to know what can be done so that this never happens again.

Friday July 20th 2007... The worst ambulance crash in USA history

Five Killed in Crash of Ambulance and Semi

July 21, 2007 08:20 AM EDT

VAN WERT, OHIO (AP) -- The Ohio State Highway Patrol continues to investigate the crash of an ambulance that killed five people Friday night, including three emergency medical technicians. Troopers say the ambulance was broadsided by a semitrailer in Crane Township, about 65 miles southwest of TOledo.

The ambulance, with four Antwerp Emergency Medical Services workers aboard, was taking two victims from an earlier car crash to a hospital. Troopers say it was broadsided by a tractor-trailer at the intersection of County Road 176 and County Road 87. The ambulance then burst into flames.

The Highway Patrol says three EMS workers were killed. They were identified as 64-year-old Sammy Smith, 31-year-old Heidi McDougall and 25-year-old Kelly Rager. The two patients were also killed. They were identified as 64-year-old Robert Wells 60-year-old Armelda Wells of Hicksville.

Another emergency medical technician, Matt McDougall, and the truck driver, Gerald Chapman, Jr. of Indiana, were both taken to the hospital. It's not yet clear whether they suffered any injuries.

Authorities have not said who had the right of way at the rural intersection nor have they said if the ambulance's emergency siren and lights were turned on.

Antwerp fire chief says, 'They were doing what they loved...'

Lisa Nicely
July 22, 2007

By LISA NICELY

nicely@crescent news com

ANTWERP -- They were heroes until the end.

Emergency personnel throughout the region are also shocked and mourning their own.

"That's one of our worst scenarios when it's one of our own," said Con Shuherk of the Payne Fire Department.

"Everyone is a brotherhood," said Friend. "Everybody looks after everybody."

Randy Shaffer, director of Paulding County Emergency Management Agency, said the accident has had a deep impact.

"It has affected every emergency personnel in the county," he said. "We know it could happen at any time. We read about it in our newsletter. We just don't think it's going to happen to us."

Shaffer said when a call came in that an ambulance was involved in an accident Friday, "I think every squad in the county activated."

…as he had been trained to do…??

Sides differ on who ran red light in ambulance wreck that killed teen - Alabama

Assistant District Attorney Robert Becher told the jury today in his opening statement that Tennessee ambulance driver Charles Christopher Eakes was speeding and ran a red light when he collided with Dianna Bowden at U.S. 231/431 and West Limestone Road.

But Eakes' lawyer, Robert Presto, said in his opening argument that Bowden ran the red light and darted into the path of the ambulance.

Bowden, 18, was killed in the wreck Oct. 13, 2005, about seven miles north of Huntsville in Hazel Green.

Troopers estimated that Eakes was driving 81 mph in a 60 mph speed zone. But Presto said Eakes had slowed to about 50 mph to go through the intersection, as he had been trained to do.

When the wreck occurred, the ambulance was transporting a patient, Earnest Cook, to Huntsville Hospital from Fayetteville on a non-emergency basis.

- **To quote Steve “Sid” Caesar – Director IHS ES**

“We want everyone to get home safely each day”

Background:

- Emergency Medical Services (EMS) transportation and patient handling have been identified to have high risk of occupational fatality and injury

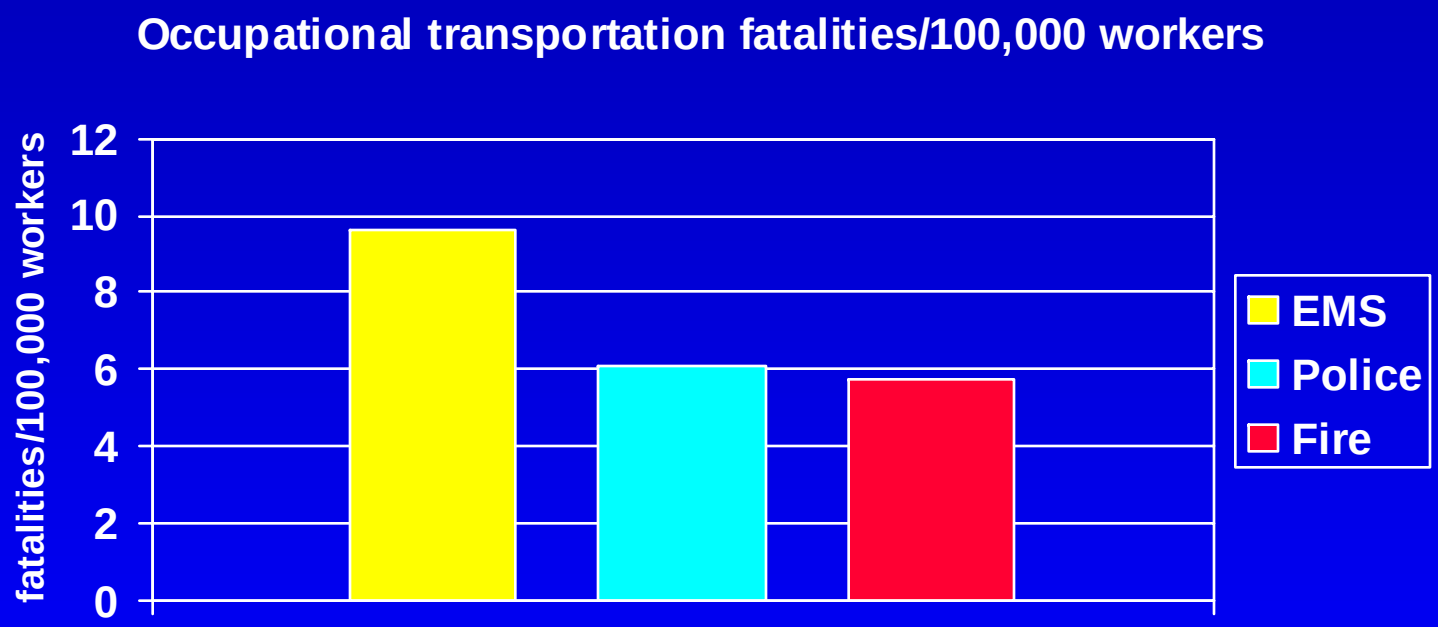
EMS fatalities

EMS personnel fatalities*

- 74% transportation related
  - 1/5 of ground transport fatalities were struck by moving vehicles
- 11% were cardiovascular
- 9% were homicide
- 4% needle sticks, electrocution, drowning and other

** Maguire, Hunting, Smith & Levick, Occupational Fatalities in Emergency Medical Services: A Hidden Crisis, Annals of Emergency Medicine, Dec 2002*

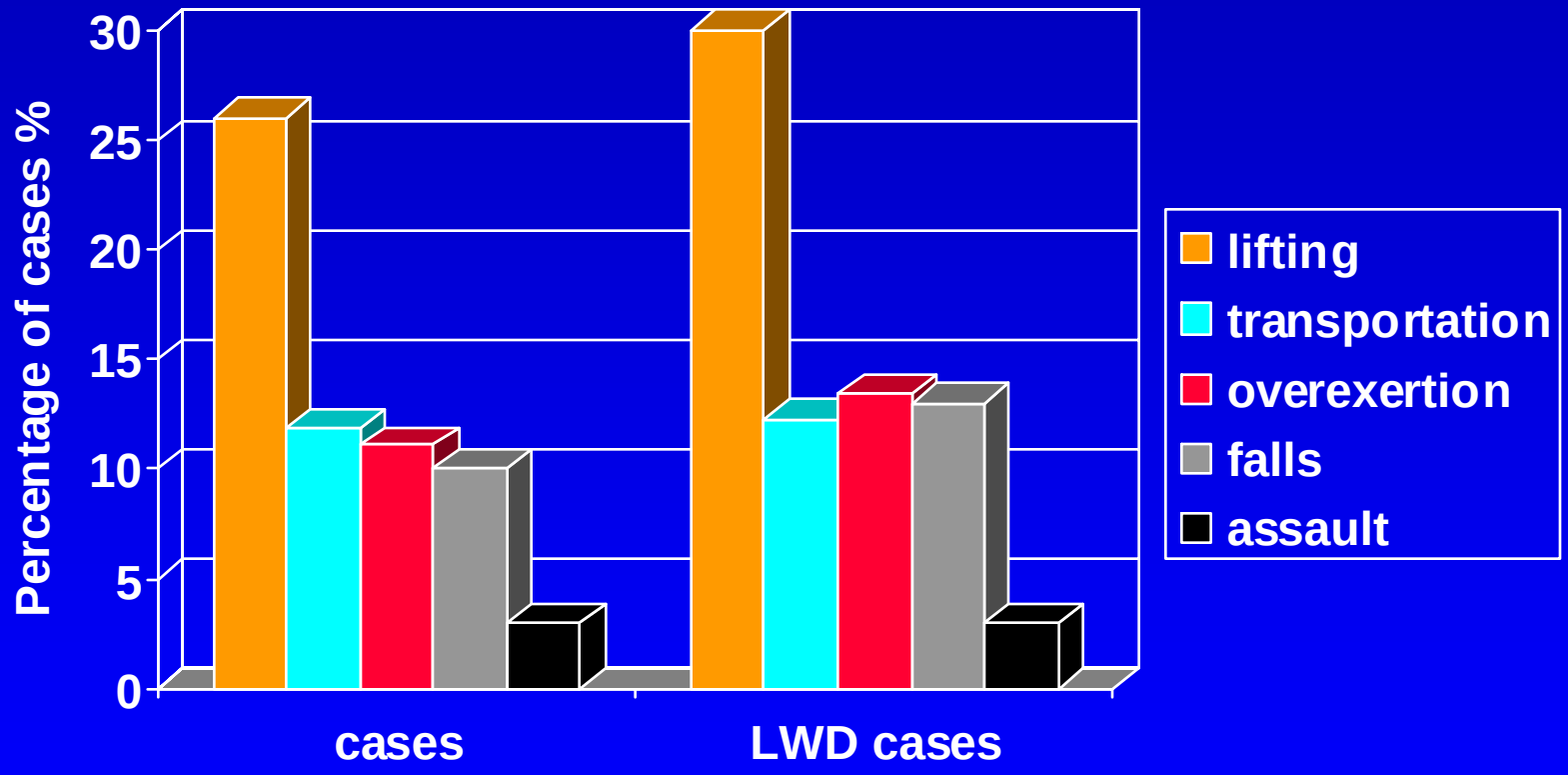
Comparative EMS Occupational transportation fatalities*



- **WE HAVE A BIG PROBLEM HERE**

** Maguire, Hunting, Smith & Levick, Occupational Fatalities in Emergency Medical Services: A Hidden Crisis, Annals of Emergency Medicine, Dec 2002*

EMS provider injury events*



** Maguire, Hunting, Guidotti, Smith Occupational Injuries among Emergency Medical Services Personnel Pre-hospital Emergency Care, Vol. 9:4 October 2005 , pages 405 - 411*

EMS Injuries*

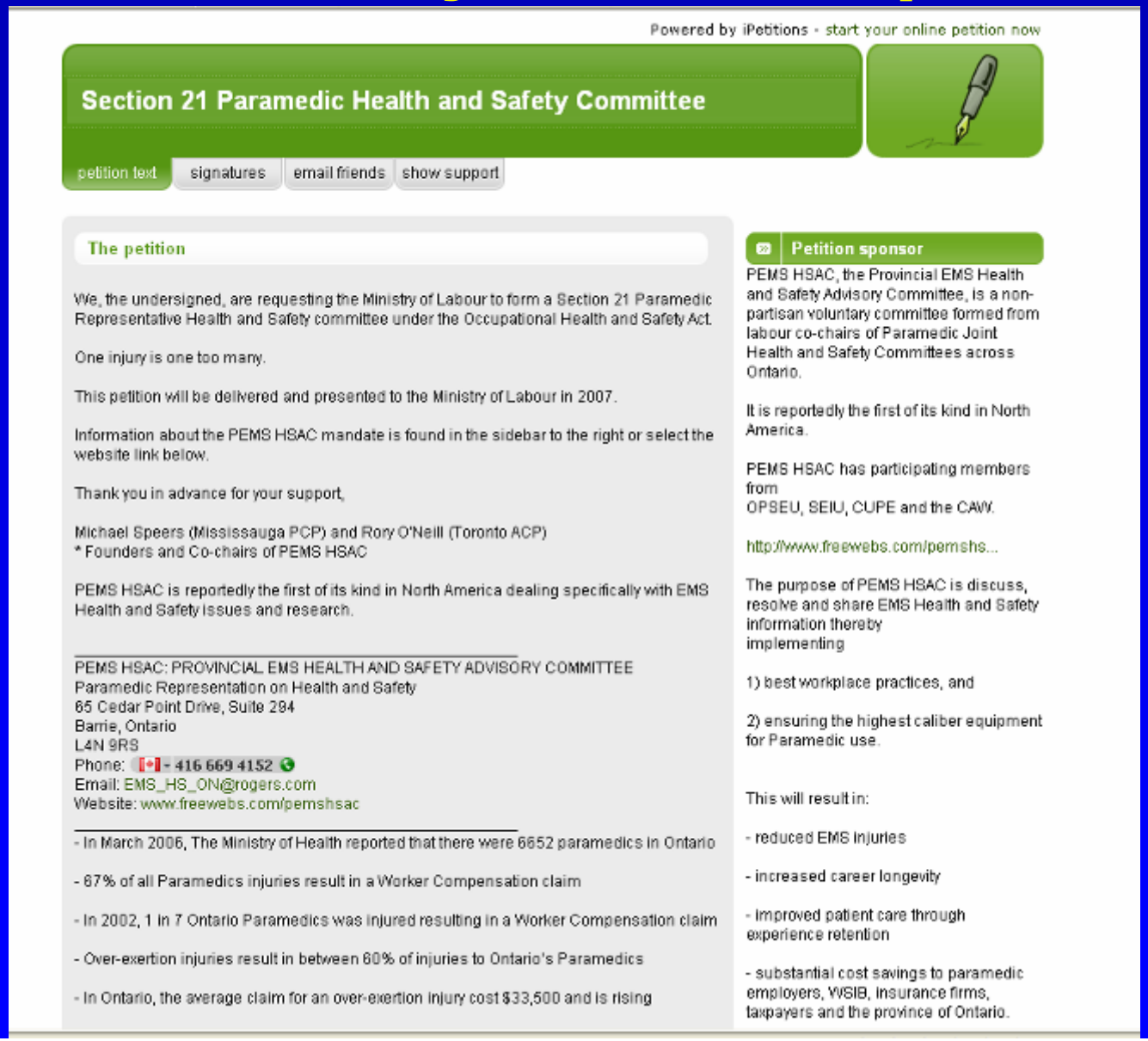
- Higher than the injury rate for any private industry published by DOL
- 34.6 injuries/100 fulltime workers per year
- 1.5 x that of fire fighters
- 5.8 x that of health services personnel
- 7 x the national average

** Maguire, Hunting, Guidotti & Smith, Occupational Injuries among Emergency Medical Services Personnel, Pre-hospitial and Emergency Care Oct/Dec 2005*

Approach:

- Search of available federal, regional and association EMS transportation safety data, training and transportation (patient handling and vehicle) related safety standards.

Canadian EMS occupational safety leadership



Powered by iPetitions - start your online petition now

Section 21 Paramedic Health and Safety Committee

petition text | signatures | email friends | show support

The petition

We, the undersigned, are requesting the Ministry of Labour to form a Section 21 Paramedic Representative Health and Safety committee under the Occupational Health and Safety Act.

One injury is one too many.

This petition will be delivered and presented to the Ministry of Labour in 2007.

Information about the PEMS HSAC mandate is found in the sidebar to the right or select the website link below.

Thank you in advance for your support,

Michael Speers (Mississauga PCP) and Rory O'Neill (Toronto ACP)
* Founders and Co-chairs of PEMS HSAC

PEMS HSAC is reportedly the first of its kind in North America dealing specifically with EMS Health and Safety issues and research.

PEMS HSAC: PROVINCIAL EMS HEALTH AND SAFETY ADVISORY COMMITTEE
Paramedic Representation on Health and Safety
65 Cedar Point Drive, Suite 294
Barrie, Ontario
L4N 9RS
Phone: + 1 - 416 669 4152
Email: EMS_HS_ON@rogers.com
Website: www.freewebs.com/pemshsac

- In March 2006, The Ministry of Health reported that there were 6652 paramedics in Ontario

- 67% of all Paramedics injuries result in a Worker Compensation claim

- In 2002, 1 in 7 Ontario Paramedics was injured resulting in a Worker Compensation claim

- Over-exertion injuries result in between 60% of injuries to Ontario's Paramedics

- In Ontario, the average claim for an over-exertion injury cost $33,500 and is rising

Petition sponsor

PEMS HSAC, the Provincial EMS Health and Safety Advisory Committee, is a non-partisan voluntary committee formed from labour co-chairs of Paramedic Joint Health and Safety Committees across Ontario.

It is reportedly the first of its kind in North America.

PEMS HSAC has participating members from
OPSEU, SEIU, CUPE and the CAW.

http://www.freewebs.com/pemshs...

The purpose of PEMS HSAC is discuss, resolve and share EMS Health and Safety information thereby implementing

1) best workplace practices, and

2) ensuring the highest caliber equipment for Paramedic use.

This will result in:

- reduced EMS injuries

- increased career longevity

- improved patient care through experience retention

- substantial cost savings to paramedic employers, WSIB, insurance firms, taxpayers and the province of Ontario.

September 11, 2007

U.S. Department of Labor
Occupational Safety & Health Administration

www.osha.gov

Search GO Advanced Search

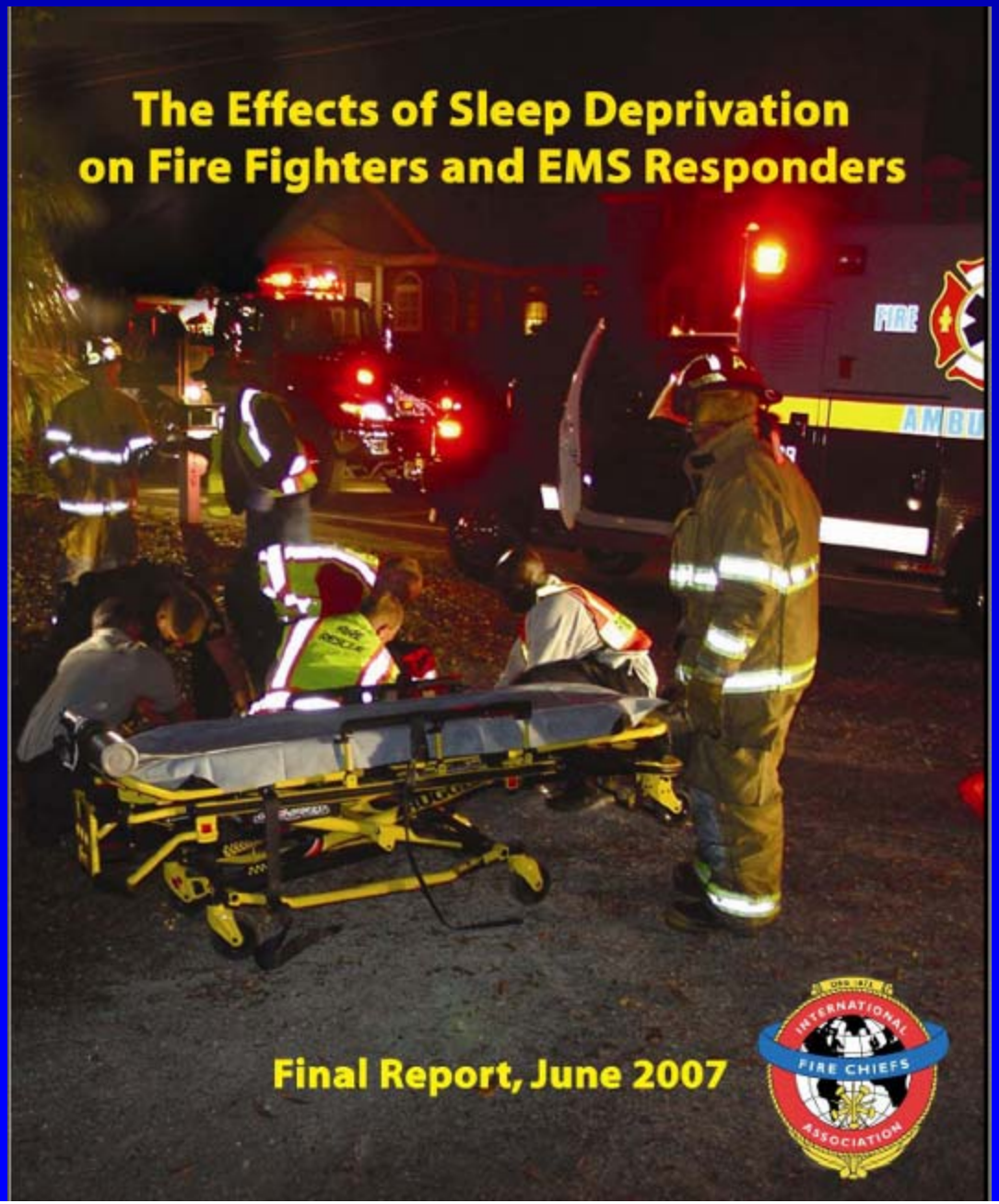
Unified Agenda
Prerule Stage
1218-AC17 - 1827. EMERGENCY RESPONSE AND PREPAREDNESS

Unified Agenda - Table of Contents

1827. EMERGENCY RESPONSE AND PREPAREDNESS

Priority: Other Significant. Major status under 5 USC 801 is undetermined. Unfunded Mandates: Undetermined Legal Authority: 29 USC 655(b); 29 USC 657 CFR Citation: 29 CFR 1910 Legal Deadline: None Abstract: Emergency responder health and safety is currently regulated primarily under the following standards: the fire brigade standard (29 CFR 1910.156); hazardous waste operations and emergency response (29 CFR 1910.120); the respiratory protection standard (29 CFR 1910.134); the permit-required confined space standard (29 CFR 1910.146); and the bloodborne pathogens standard (29 CFR 1910.1030). Some of these standards were promulgated decades ago and none were designed as comprehensive emergency response standards. Consequently, they do not address the full range of hazards or concerns currently facing emergency responders. Many do not reflect major changes in performance specifications for protective clothing and equipment. Current OSHA standards also do not reflect all the major developments in safety and health practices that have already been accepted by the emergency response community and incorporated into National Fire Protection Association (NFPA) and American National Standards Institute consensus standards. OSHA will be collecting information to evaluate what action the agency should take.

IAFC June 2007



Policy makes a difference…

ELSEVIER
www.elsevier.com/locate/jsr

Journal of Safety Research 38 (2007) 1 – 8

www.nsc.org

Organizational policy and other factors associated with emergency medical technician seat belt use

Jonathan R. Studnek [a,*], Amy Ferketich [b]

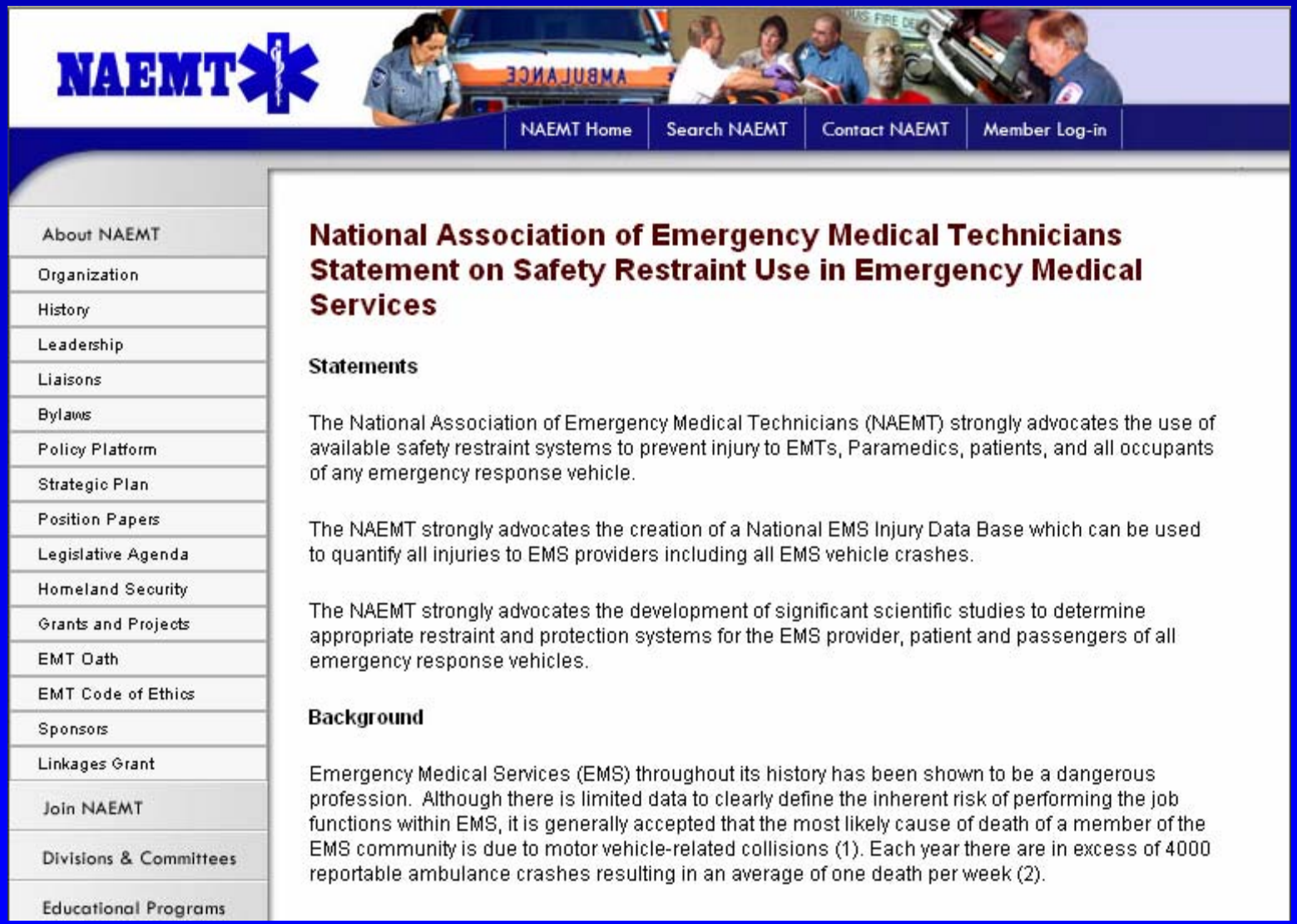
[a] National Registry of Emergency Medical Technicians, PO Box 29233, Columbus, Ohio 43230, USA
[b] Division of Epidemiology, School of Public Health, The Ohio State University, Columbus, Ohio, USA

Received 3 August 2006; accepted 25 September 2006

Abstract

Introduction: The purpose of this study was to determine factors associated with seat belt usage among Emergency Medical Technicians (EMTs). *Methods:* As part of biennial re-registration paperwork, nationally registered EMTs completed a survey on the safety and health risks facing Emergency Medical Services (EMS) providers. Respondents were asked to describe their seat belt use while in the front seats of an ambulance. They were categorized as "high" in seat belt use if it had been more than a year since they had not worn their seat belt or "low" in seat belt use if they had not worn their seat belt at least once within the past 12 months. A logistic regression model was fit to estimate the association between seat belt use, organizational seat belt policy, type of EMS organization worked for, EMT certification level, and the size of community where EMS work is performed. *Results:* Of the 41,823 EMTs that re-registered in 2003, surveys were received from 29,575 (70.7%). A significant interaction between organizational seat belt policy and type of EMS organization was found to exist. Participants reporting no organizational seat belt policy had lower odds of seat belt usage when compared to individuals that do have a seat belt policy. Odds Ratios ranged from 0.20 (95% CI 0.10–0.40) for military organizations to 0.59 (95% CI 0.38–0.93) for private EMS organizations. Paramedics and those working in rural areas also had lower odds of seat belt use. *Conclusion:* Several factors were found to be associated

NAEMT July 2006 Position statement



Findings:

- Data sources –
  - No specific database to identify occupational fatality or injury pre – 2003
  - NEISS-Work – narrative on business type
  - BLS
    - Survey of Occupational Injury & Illness – EMT's, Paramedics code:29-2041
    - Census of Fatal Occupational injury –Ambulance Services code:62191
  - No reliable exposure or denominator data
  - NHTSA (FARS/NASS/CDS) transport safety data fields captured for EMS were minimal with incomplete numerator data for both morbidity and mortality and virtually non-existent denominator data
- OSHA only addresses biohazards – not mechanical injury or shift duration
- NAEMT Association seat belt position statement - 2006
- Exempt from Federal Motor Vehicle Safety Standards (FMVSS)
- Exempt from Federal Motor Carrier Safety Administration (FMCSA)
- Ambulance Manufacturing Division/KKK-F GSA, at best embarrassing
- Not investigated by NTSB since 1979
- Fundamental peer reviewed accepted technical data not applied to transportation/occupational health and safety in this field

30 years later, ~1,600 fatalities and still the same problem

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: May 17, 1979

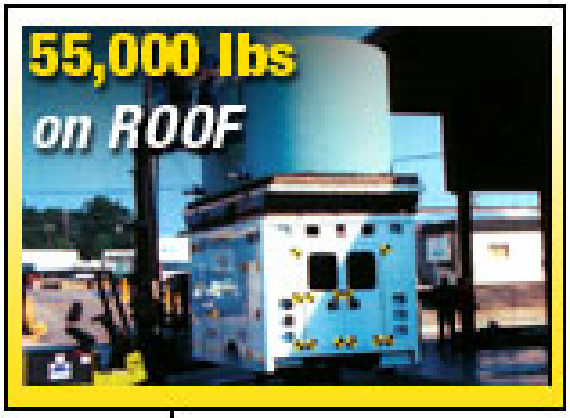
The interior of the ambulance body was severely damaged. The flooring, oxygen bottles, litter, cabinets, and bench were either destroyed or ejected from the ambulance. Because the plywood flooring was not secured to the floor or chassis, everything attached to or resting on it came loose when the ambulance rolled over. All body structures were deformed downward and to the right.

A review of the Federal Motor Vehicle Safety Standards (FMVSS) revealed that there are no standards or specifications which assure that the total design and construction of ambulances as modified by the after-market installers are of sufficient structural strength and stability to withstand impact forces similar to requirements imposed on the original vehicle manufacturer. FMVSS 208, "Occupant Crash Protection in Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Buses," applied to the 1974 Chevrolet Suburban Custom 10 Van as manufactured. However, this protection was not extended to the patient(s) or medical personnel occupying the body of the ambulance since it did not apply to the modifications made after the vehicle was sold by the manufacturer.

There are no performance requirements for the after-market modifications to vehicle structural integrity, crashworthiness, interior occupant protection, and the anchorage of items such as litters, benches, cabinets, oxygen bottles, or flooring. The only guidance concerning these safety

Unacceptable, and ridiculous AMD/KKK-F '*safety testing*' practices and standards !!??

AMBULANCE TEST RECORD BROKEN



THAT WAS THEN

THIS IS NOW...

In 2000, shattered industry records by testing and certifying the modular body to more than double the 150% curb weight Federal Standard. In addition, they performed a body side test that had never been seen before. Now has broken that record with a 55,000 body test on the top and side of the module. The ambulance body is now certified to a 500% curb weight level! **»MORE INFO**

INDUSTRY LEADING SAFETY INNOVATION

No ‘a’… then NO ‘F’ !!!!!

- $F \equiv ma$

where F – force

m – mass

a – acceleration

Policy and practice ignorant of existing technical safety data

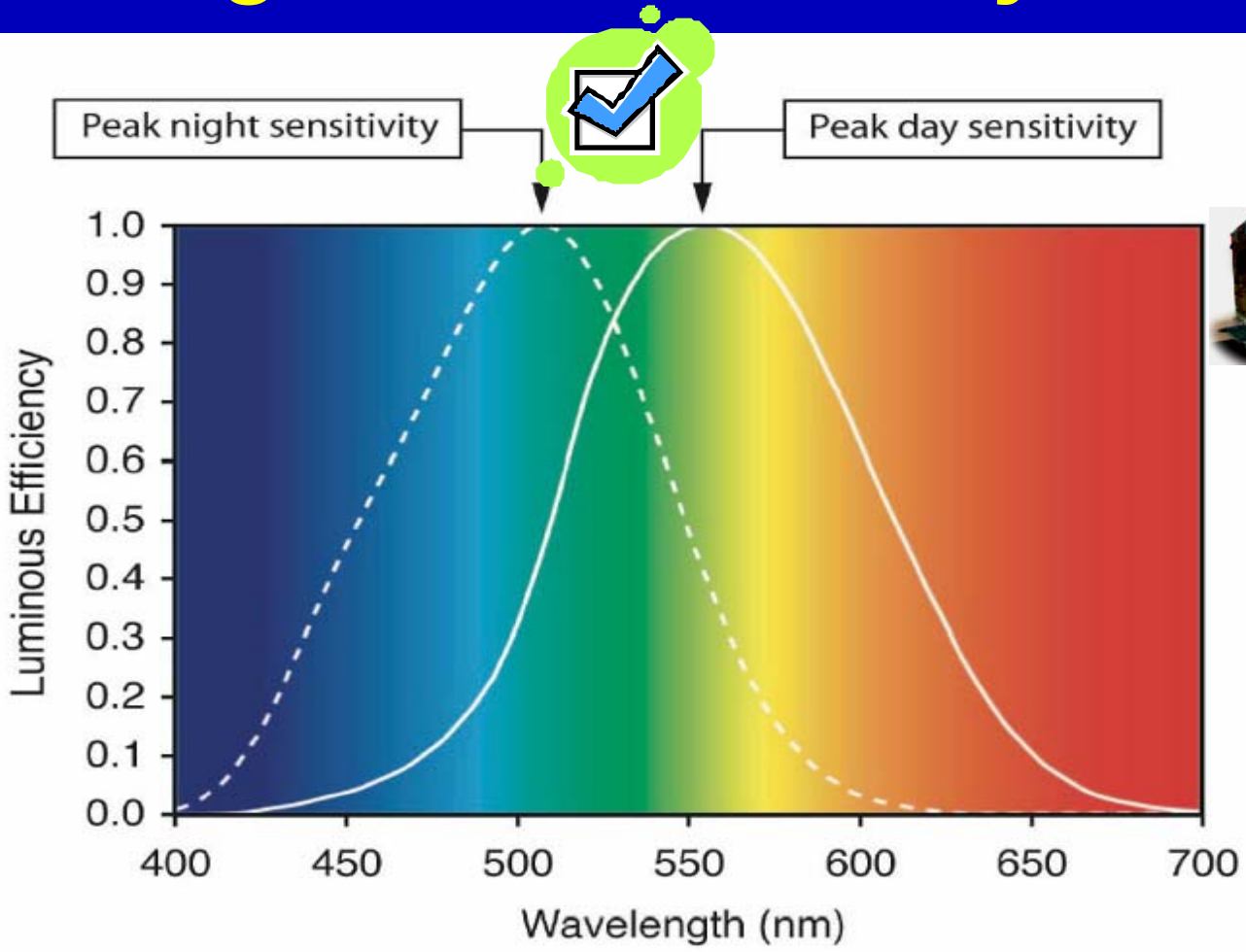
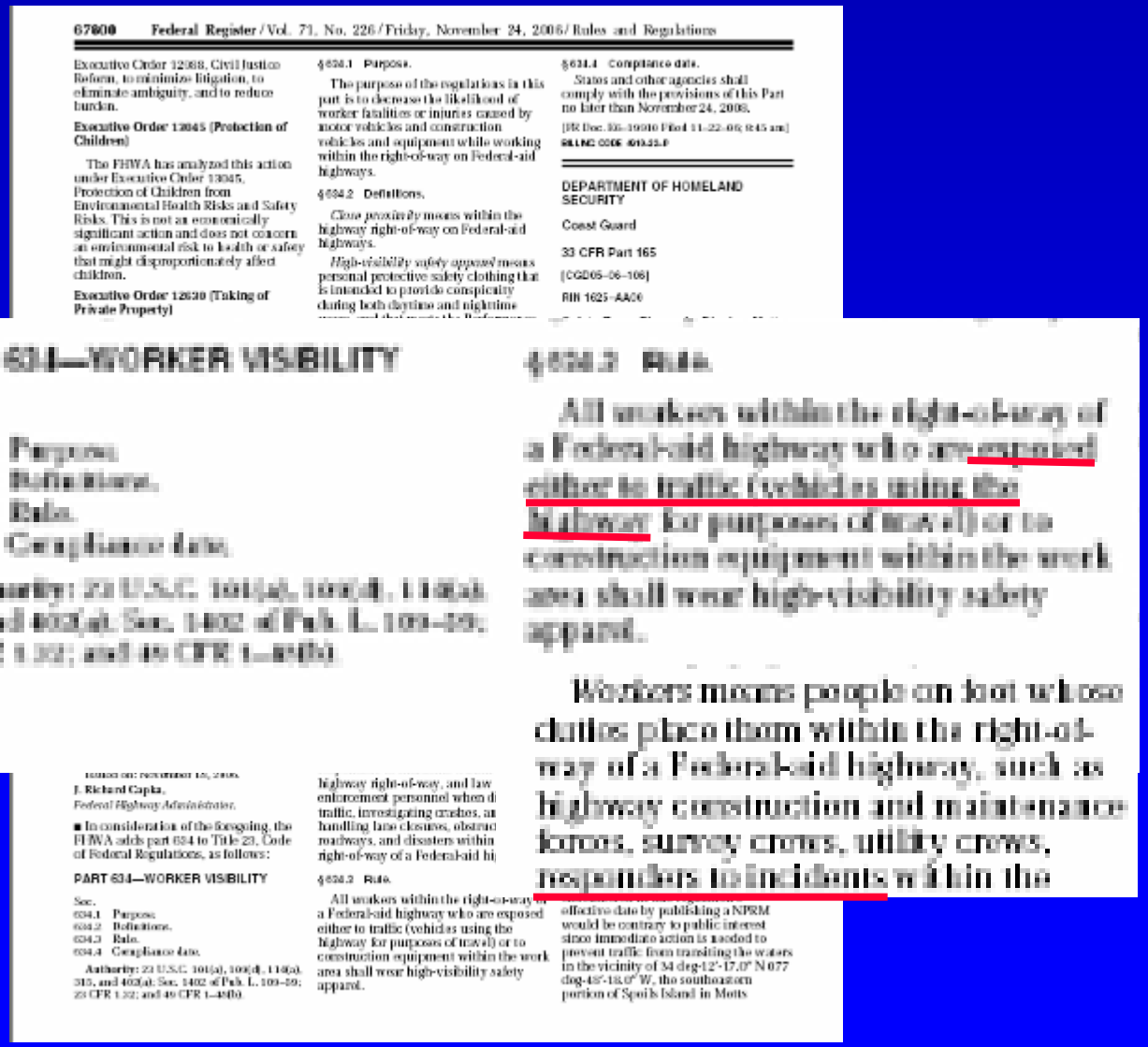


Figure 1. The scotopic (dashed line) and photopic (solid line) luminous efficiency functions, describing the spectral sensitivities of night and day vision, respectively.

Worker visibility Act:
Help is on the way !! November 24th 2008



67800 Federal Register / Vol. 71, No. 226 / Friday, November 24, 2006 / Rules and Regulations

Executive Order 12988, Civil Justice Reform, to minimize litigation, to eliminate ambiguity, and to reduce burden.

Executive Order 13045 (Protection of Children)

The FHWA has analyzed this action under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This is not an economically significant action and does not concern an environmental risk to health or safety that might disproportionately affect children.

Executive Order 12630 (Taking of Private Property)

§ 634.1 Purpose.

The purpose of the regulations in this part is to decrease the likelihood of worker fatalities or injuries caused by motor vehicles and construction vehicles and equipment while working within the right-of-way on Federal-aid highways.

§ 634.2 Definitions.

Close proximity means within the highway right-of-way on Federal-aid highways.

High-visibility safety apparel means personal protective safety clothing that is intended to provide conspicuity during both daytime and nighttime

§ 634.4 Compliance date.

States and other agencies shall comply with the provisions of this Part no later than November 24, 2008.

[FR Doc. E6–19010 Filed 11–22–06; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[CGD05–06–106]

RIN 1625–AA00

PART 634—WORKER VISIBILITY

Sec.

634.1 Purpose.

634.2 Definitions.

634.3 Rule.

634.4 Compliance date.

Authority: 23 U.S.C. 101(a), 109(d), 114(a), 315, and 402(a); Sec. 1402 of Pub. L. 109–59; 23 CFR 1.32; and 49 CFR 1.48(b).

§ 634.3 Rule.

All workers within the right-of-way of a Federal-aid highway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel.

Workers means people on foot whose duties place them within the right-of-way of a Federal-aid highway, such as highway construction and maintenance forces, survey crews, utility crews, responders to incidents within the

J. Richard Capka,

Federal Highway Administrator.

■ In consideration of the foregoing, the FHWA adds part 634 to Title 23, Code of Federal Regulations, as follows:

PART 634—WORKER VISIBILITY

Sec.

634.1 Purpose.

634.2 Definitions.

634.3 Rule.

634.4 Compliance date.

Authority: 23 U.S.C. 101(a), 109(d), 114(a), 315, and 402(a); Sec. 1402 of Pub. L. 109–59; 23 CFR 1.32; and 49 CFR 1.48(b).

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effective date by publishing a NPRM would be contrary to public interest since immediate action is needed to prevent traffic from transiting the waters in the vicinity of 34 deg-12'-17.0" N 077 deg-48'-18.0" W, the southeastern portion of Spoil Island in Motts

Summary:

- **Transport and ergonomics safety hazards are the biggest issues in EMS injury and fatality**
- **Both are devoid of acceptable safety standards, and minimally addressed by any meaningful let alone validated training***
- **Lack of a national oversight of EMS safety data and safety standards, as exists for fire and police**
- **Only certified driver training program is EVOC/CEVO, neither validated nor had efficacy demonstrated – and is NOT mandatory****
- **Data driven best practices scarce**

*Emergency Medical Technician—Basic: National Standard Curriculum. US Department of Transportation, National Highway Traffic Safety Administration

**Emergency Vehicle Operator Course, EVOC

Discussion:

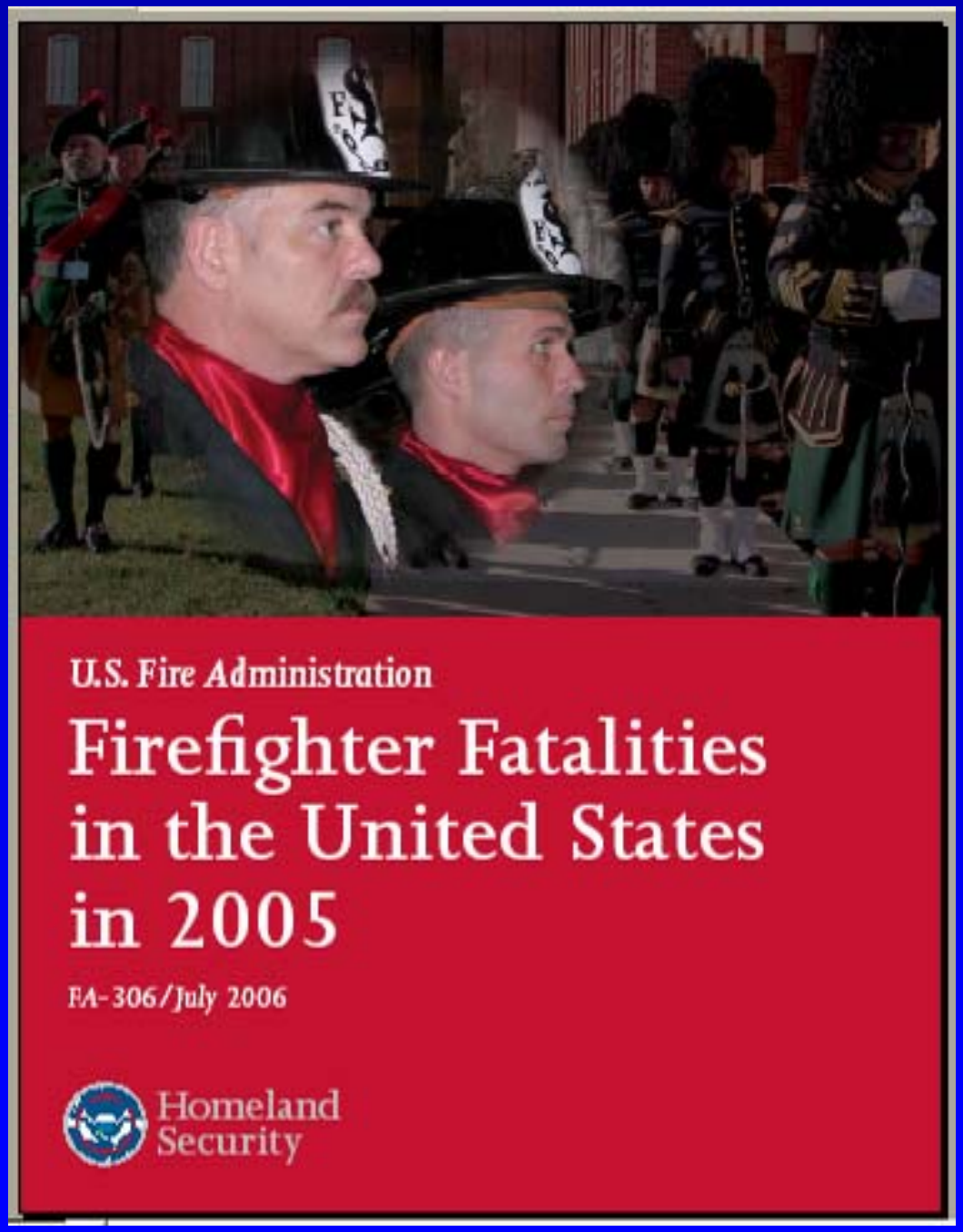
- The mix of volunteer and career providers is raised as an explanation for this situation - however such lack of safety data and standards does not occur for the fire dept which has a similar challenges
- Federal Motor Vehicle Carrier Safety Administration (FMCSA) data capture system provides extensive data on both numerator and denominator aspects of truck safety – EMS is exempt along with other emergency services, however police and fire have comprehensive alternate data bases to capture this data
- Standards for occupant protection and for securing equipment in a moving vehicle, and standards for patient and equipment handling loads do not exist in EMS
- There are more stringent safety standards for moving cattle than there are for moving patients

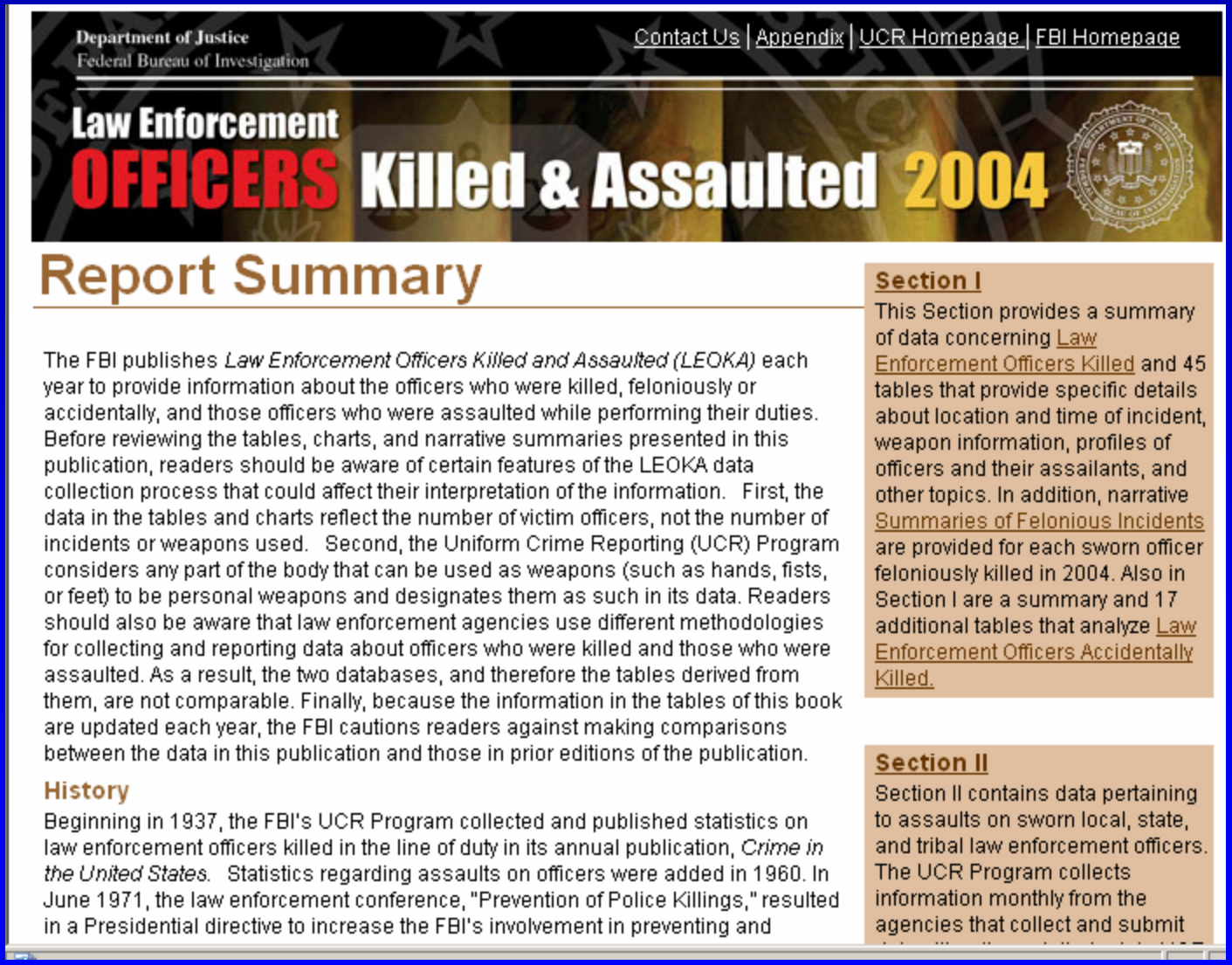
Its time we hauled the elephant out of the room…

Conclusion:

- There is a serious deficiency in the occupational health and safety focus on the transportation related safety, training and standards for EMS
- Transportation safety training and oversight in the vehicles or at the scene, has not shared the focus that is present in other aspects of EMS safety (biohazards) or as for transport safety for other first responders
- There are exemptions from potentially protective standards
- Standards exist which are ignorant of fundamental technical information
- It is unacceptable that in the setting of transportation and patient handling being the primary causes of morbidity and mortality in EMS, that these areas are devoid of oversight and safety standards

Breaking News!!
National Academies
TRB EMS/Medical Transport Safety Subcommittee – Jan 16, 2008





Night visibility

Learning Objectives:

- To define the vehicle related transportation occupational safety issues in EMS
- To determine the transportation related scene and stretcher hazards
- To identify what national data capture and databases exist to evaluate EMS transportation related occupational injury
- To assess existing EMS transportation related vehicle and scene occupational safety standards