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Panel Moderator
Estero Fire Rescue



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Hudson Valley Community
College Paramedic Program



STEVEN FORRY
Glatfelter Insurance
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KATHLEEN GONCZI
FDNY Safety/Inspection
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KEITH McMINN
Tactical Medical Unit,
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RICHARD PAIN
Transportation Research
Board (TRB)



WILLIAM J. TROUP
U.S. Fire Administration

SPECIAL REPORT

AMBULANCE SAFETY FIRST

Experts convene to discuss personal & patient safety issues

BY TERESA McCALLION, EMT-B



A Roundtable Discussion at EMS Today 2007, sponsored by Wheeled Coach

Six national experts formed an Ambulance Safety Roundtable at the 25th Annual EMS Today Conference & Exposition in March 2007 in Baltimore to discuss safety concerns, from current poor ambulance design to methods for improving driving skills. The event—sponsored by Wheeled Coach and moderated by Rick Patrick, MS, EMT-P, a safety expert and deputy fire chief for the Estero (Fla.) Fire Rescue District—highlighted issues regarding personal and patient safety.

Patrick led the discussion by noting that available data indicates an increase in the number of ambulance crashes each year. In addition to the personal toll these collisions inflict, more and more ambulance operators are being held accountable for incidents they cause. Charges of negligent homicide and costly lawsuits are becoming more common. As a result, the care and safety of prehospital providers while traveling to and from calls has become a critical issue for many emergency service providers.

CAPTURING THE PROBLEM

The panelists pointed out that the lack of specific data hinders serious attempts to quantify the root cause of ambulance collisions. Surprisingly, no single agency collects data on emergency vehicle collisions. Police officers file fatality collision reports but often fail to note specifics important to the EMS industry, such as whether or not an injured civilian was a patient in the ambulance.

Panelist Richard Pain, PhD, transportation safety coordinator for the Transportation Research Board (TRB), a unit of the National Academy of Sciences, noted that even if the data were available, fatal collisions are extremely rare events, especially for EMS. "There's not enough data to study," he said, recommending that any future databases be expanded to include tracking of injuries and close calls.

The lack of data forces EMS managers to rely on anecdotal or department-specific data. Lt. Kathleen Gonczi, EMS liaison to the Fire Department of New York (FDNY) Safety/Inspection Command, said that although the FDNY Fire Division has experienced a downturn in collisions, the EMS Division has seen a significant increase since 2004—from an average of 611 reported incidents in 2004 to 1,000 in 2006.

Gonczi attributed the decrease in collisions involving fire apparatus to a driver-safety initiative the department implemented. Safety officers visited every firehouse and met with members one-on-one to discuss safety practices. While there, they also gathered information from the drivers about collisions. "The key to true safety is two-way communication," she said. "We cannot give you answers about safety if we're not capturing the problem."

AMBULANCE DESIGN

One issue panelists agreed on was the need for improved ambulance design. They acknowledged that few government regulations or requirements are in place for ambulance manufacturing and testing. It was noted that although the chassis must meet federal motor vehicles safety standards, few federal safety standards exist for ambulance conversion. However, it was acknowledged that may soon change.

Several audience members who represented ambulance manufacturers said they would welcome safety regulations. Currently, bids for ambulance design often go to the manufacturer that can build the vehicle the cheapest. It was noted that safety features that significantly add to the bottom-line cost of an ambulance might cause a manufacturer to lose a bid.

Gonczi said ambulance design must include an ergonomic assessment of the patient compartment. "We need professionals to look at this [issue]," she said, describing her frustration with the placement of important items, such as sharps disposable containers, that are out of easy reach of providers when property restrained in a seat belt.

Attendees suggested looking to other related industries for the answer to safety issues. "We are grappling with issues that the automotive industry has already studied, has data [on], and knows only too well," said audience member Nadine Levick, MD, MPH, executive director of Objective Safety LLC.

Levick noted that ambulances are designed outside of the automotive industry and not tested for crashworthiness, "making them more than twice as lethal as large trucks." She was especially concerned about the seating arrangements inside the ambulance. "There's no justification for a sideways-facing seat in a forward-moving vehicle," she said.

Pain agreed that the science is available. Task analysis, such as the kind used by the Department of Defense and National Aeronautics and Space Administration, can help identify and incorporate safety features. "That drives your design," he said. "There's no reason, except for money, that this couldn't be done in the ambulance world."

With Ford Motor Company's recent decision to suspend the production of ambulance chassis, Patrick suggested that the time may be right for EMS providers to initiate much needed design changes. Until this year, Ford made 85% of ambulance chassis sold in the U.S.



"The key to true safety is two-way communication. We cannot give you answers about safety if we're not capturing the problem." KATHLEEN GONCZI

EXTERNAL SAFETY FACTORS—OTHER DRIVERS

Steven Forry, a former paramedic who now works for the Glatfelter Insurance Agency/VFIS (a national insurer of fire departments and ambulance services), stated that some factors, such as a dramatic increase in traffic volume and density, are beyond the control of EMS. In addition, engineers of new cars have managed to nearly eliminate outside noise, including the sound of sirens. Improved audio systems can also play a role in further isolating drivers from the outside environment.

According to Forry, a trend that's especially hard to document is the increasing number of aggressive drivers on the road. He said drivers' frustration with congestion and delays often affects how they respond to emergency vehicles. "People simply aren't willing to move out of the way because they are afraid of losing their spot or [feel] they might not get through the next light, and they don't want to have to wait," he said.

DRIVER'S EDUCATION

Maryland State Police Sergeant Keith McMinn, NREMT-P, reported that five years ago, Maryland law enforcement agencies began using onboard recording devices in their vehicles. At first, he said, officers viewed the cameras with suspicion, but over the years the device has been used in support of drivers of emergency vehicles far more than as a means for retribution.

"I think it's an underutilized tool in this industry," McMinn added.

The results of a pilot test of DriveCam by FDNY were mixed, Gonczi said. She noted that monitoring the film footage proved to be an overwhelming task for supervisors. However, she reported that the system did encourage the vehicle operator to drive more safely. The concern Gonczi said she had about the method was that it's reactive instead of proactive.

Pain prefers an event data recorder, such as one offered by Road Safety, that's triggered when a significant event has occurred. In his capacity as the transportation safety coordinator for the TRB, he manages 23 volunteer safety committees that cover diverse aspects of highway and traffic safety. He says that teenagers using the system tend to treat it like a video game. Their goal is to beat the computer by not triggering it. "The end result is they are driving safer," Pain said.

Pain is not as enthusiastic about using simulators for emergency driver training. It's a great tool to help drivers

learn new routes, he noted, but “there is no scientific evidence of a solid transfer of training from the simulated situation to a real-world situation,” he said. “The essence of driving is interacting with other traffic. For real driver training, you’d have to have a pretty sophisticated system.”

Even though simulators are used effectively in the aviation industry, Pain said they don’t work well for driving. “Flying is basically procedural,” he said. “[Pilots] don’t interact with traffic. Driving is far more complex visually, and it’s very hard to simulate.”

The FDNY EMS Division uses a simulator donated by NASCAR. Unfortunately, getting time on the simulator is difficult. “We hire 100 people every six months,” Gonczi said. “There’s a huge waiting list [to use the simulator].” Buying another machine is not an option due to the cost, which is close to the cost of a new medic unit, she said. She also noted that like all technology, it can quickly become outdated.

Panelist William J. Troup, described the Emergency Vehicle Driving Initiative, a program he spearheaded. It’s widely used in the fire service and in fire-based EMS. The key to success, he felt, is a preceptorship program and continuing education. Troup is responsible for research, programs and partnerships in Firefighter Health and Safety for the U.S. Fire Administration (USFA), under the Department of Homeland Security.

McMinn suggested that ambulance operators aren’t the only ones who could use direction. He suggests that the law can be confusing as to what civilian drivers must do when encountering an emergency vehicle.



“There is no scientific evidence of a solid transfer of [driver] training from the simulated situation to a real-world situation.” RICHARD PAIN

HUMAN FACTORS

McMinn believes the root causes of emergency vehicle collisions are the same as any highway incident—speed and failure to pay full attention to traffic. “The focus should be on speed reduction,” he says.

“Why are we going lights and sirens to [what are clearly non-emergencies, such as] a sprained wrist?” Troup asked.

Gonczi added, “The problem with EMS is that you’re always in an uncontrolled environment.” From being unrestrained in a fast-moving ambulance to working within a confined space with little help, emergency personnel function in a world unlike any other profession.

Paramedic, educator and author Bob Elling, MPA, REMT-P, felt that one of the problems providers face daily is sleep deprivation. “There are a lot of drowsy people in EMS,” he said. “Think of all the people who come to work sleepy who aren’t 100% all the time.”

Forry agreed that fatigue is a huge factor in collision prevention. Training typically lasts for four hours at the most, he noted. “What happens after 10 or 12 hours of a shift on a bad night? How’s that person’s driving now?”

Other panel members noted that many EMS employees hold more than one job in order to make ends meet. Others work 24-hour shifts in busy systems. You may see 48-hour shifts becoming more common in the fire service, especially on the West Coast, said Troup.

To help understand the effect on firefighters, EMS providers and other emergency responders, Troup said the USFA, in conjunction with the International Association of Fire Chiefs and Oregon Health & Science University, has undertaken a study on sleep deprivation and emergency services. The report is expected in September 2007.

PREVENTING COLLISIONS

To help prehospital providers stay safe now, Gonczi recommended enforcing safety messages—such as remaining seated and belted in the back of a moving ambulance. “In 15 years in the field, I know I was more unrestrained than restrained,” she admitted.

Part of the problem is the mixed messages. “We get close to giving that message, but we can’t because of the CPR issue,” she says. “Once we send that mixed message, it’s a gray area that keeps expanding.”

It’s a message worth enforcing. Our job, she notes, is to stabilize the patient for transport. “So why are we still doing patient care en route? If we have to get up, why can’t we turn to our partner and say, ‘Pull over, I have to do something?’” she asked.

Troup recommended conducting background checks on all drivers, both at the beginning of their service and on an ongoing, scheduled basis. “Paramedics have to recertify every two years; why not drivers?” he asked.

Elling agreed. “We do a lot of continuing medical education, but there’s virtually no driver’s education required. There [aren’t] even any educational materials,” he said.

As the session ended, Forry made one final plea: “I know you’re going out to save someone else’s [life], but in the meantime don’t put yours on the line to do that.” **JEMS**

Teresa McCallion, EMT-B, is a freelance public safety writer based in Bonney Lake, Wash.

ROUNDTABLE PANELISTS

Panelists’ statements do not necessarily represent the views of their affiliated organizations.

Rick Patrick, MS, EMT-P, is deputy fire chief for the Estero (Fla.) Fire Rescue District. He serves as chair of the CFSI National Advisory Committee and is the former director of EMS programs and emergency service initiatives for VFIS.

Bob Elling, MPA, REMT-P, has been a paramedic, an educator and an author for the past three decades. He’s on the faculty at the Hudson Valley Community College Paramedic Program in Troy, N.Y., and works part-time as a medic in upstate New York.

Steven Forry, VFIS, is a 40-year EMS veteran. He has worked in the education and training division and currently serves as a claims investigator for the Glatfelter Insurance Agency/VFIS.

Kathleen Gonczi is a 15-year EMS veteran. She has worked as an EMT, a paramedic and a lieutenant. She serves as the EMS liaison to the FDNY Safety/Inspection Command.

Keith McMinn, BS, NREMT-P, is a nine-year veteran of the Maryland State Police, with 18 years of total EMS experience. He supervises the Tactical Medical Unit of the Maryland State Police Special Operations Division.

Richard Pain, PhD, is the transportation safety coordinator for the Transportation Research Board, a unit of the National Academy of Sciences. He manages 23 volunteer safety committees covering diverse aspects of highway and traffic safety.

William J. Troup has been with the U.S. Fire Administration since 1990 and is responsible for programs in Research and Applied Technology, Firefighter Health and Safety, and other areas. He has been active in emergency services for more than 20 years, serving as a firefighter, assistant fire chief, and fire company president.



“People simply aren’t willing to move out of the way because they are afraid of losing their spot or [feel] they might not get through the next light and they don’t want to have to wait.” STEVEN FORRY

SAFETY RESOURCES

Emergency Vehicle Safety Initiative

www.usfa.dhs.gov/fireservice/research/safety/vehicle.shtm

This partnership effort of the USFA, the U.S. Department of Transportation/NHTSA and the DOT/Intelligent Transportation Systems Joint Program Office aims to reduce the number of firefighters killed responding to and returning from emergencies.

Roadway Safety Initiative for Emergency Responders

www.usfa.dhs.gov/fireservice/research/safety/roadway.shtm

The USFA has been working with the Cumberland Valley Volunteer Firemen’s Association Emergency Responder Safety Institute to enhance the operational safety of emergency responders on the highways, resulting in the development of the white paper, “Protecting Emergency Responders on the Highways.”

National Traffic Incident Management Coalition

<http://timcoalition.org>

Forum where national organizations representing major stakeholders involved in traffic incident response work together to promote, develop and sustain multi-disciplinary, multi-jurisdictional traffic incident management programs to achieve enhanced responder safety and reliable interoperable communications.

Study of the Impact & Mitigation of Sleep Deprivation in Emergency Services

www.usfa.dhs.gov/fireservice/research/safety/sleep_deprivation.shtm

This partnership with the International Association of Fire Chiefs seeks to study the impact of sleep deprivation on human performance and to develop mitigation measures related to the fire and emergency services. Results are expected to be released in 2007.

Development & Testing of Countermeasures for Fatigue Related Highway Crashes

www.nhtsa.dot.gov/people/injury/drowsy_driving1/listening/title.htm#title

Prepared for the National Highway Traffic Safety Administration, this report describes a project that aimed to describe antecedents to drowsy driving, profile groups of people that may be at elevated risk for involvement in a fall-asleep MVC and develop informational campaigns that would be appealing and educational to these groups.

Objective Safety

www.objectivesafety.net

Dedicated to EMS safety awareness and enhancing injury prevention and control, offering several Webinars and resources.