SECOND QUARTER **2018**

SafetyMatters

America's Medical Transportation Safety Newsletter

A quarterly, collaborative publication
from MedFlight and HealthNet
Aeromedical Services

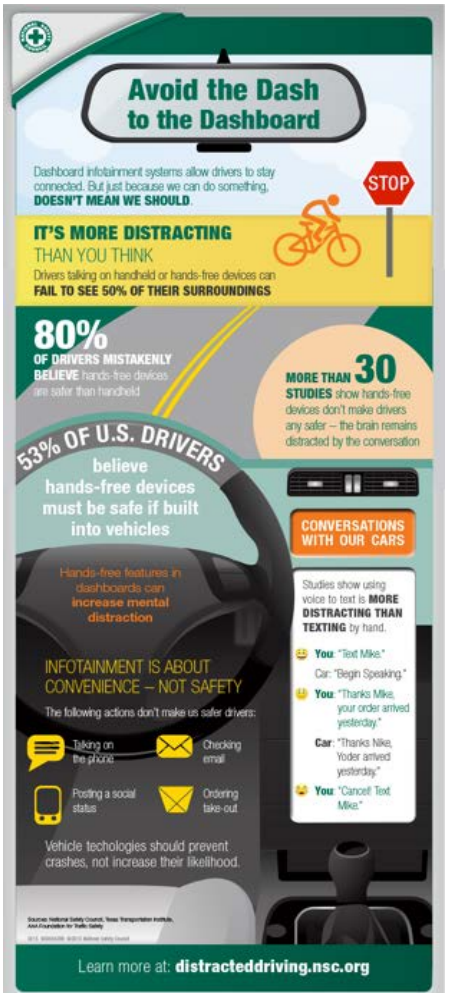
THIS ISSUE INCLUDES:

Distracted Driving: Know the risks and don't do it!

By Jeff White, FP-C, MS, MTSP-C
Director of Safety

Distracted driving while using a mobile device has become the number one cause of accidents in the last few years. Distracted driving, however, is more than just texting or talking on the phone. Using a hands-free device, using cruise control and not maintaining situational awareness are all distracted driving categories. A driver traveling 55 miles per hour that becomes distracted for only 5 seconds will travel the length of a football field. So, saying I only looked away for a second does not defend the action. Driving distracted not only puts you at a higher risk, 23.3% to be exact, but it also puts others on the road at risk. The increased risk to all parties is just not worth the risk of answering a text, checking an email or even changing the song on the radio.

While driving hands-free is legal, the use of ear buds with these devices poses a threat. Using ear buds or headphones while driving decreases your situational awareness of what is happening on the road around you. It also increases the difficulty of you hearing your partner in the patient compartment if they would need help. ■



MedFlight

HealthNet Aeromedical Services

Mission. Ready.

We're Safer When We Train Together: HealthNet Aeromedical Services 4/MedFlight 7's Healthcare Training Weekend

By Amanda Ball
Safety Officer
MedFlight

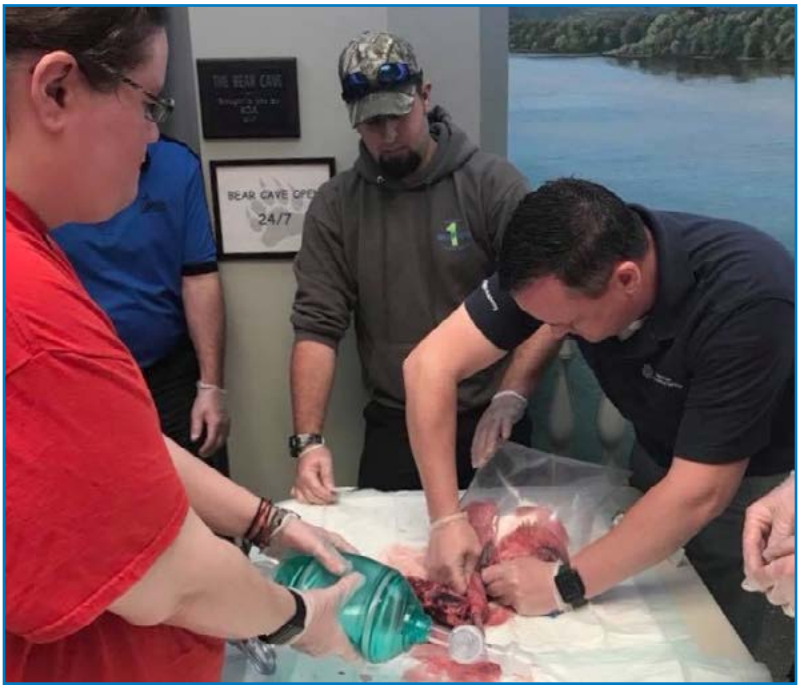
Over a decade ago, Healthnet Aeromedical Services and MedFlight partnered to open the first co-owned and operated base in the nation. Referred to by locals as HealthNet 4/ MedFlight 7, the team is based at the Greater Portsmouth Regional Airport and serves citizens in Ohio, Kentucky, and West Virginia on a daily basis. The team is steeped in experience and led locally by those who are passionate for elevating safety and maintaining quality in the industry.

Serving a rural area scattered with EMS and volunteer fire departments, they recognized a need early on for continuing education in the area. This year, the team hosted its 10th Tri-State Conference at Shawnee State University in Portsmouth, OH. What originally began as a small conference for healthcare providers has grown into a regional multi-track training for EMS, nurses and firefighters.

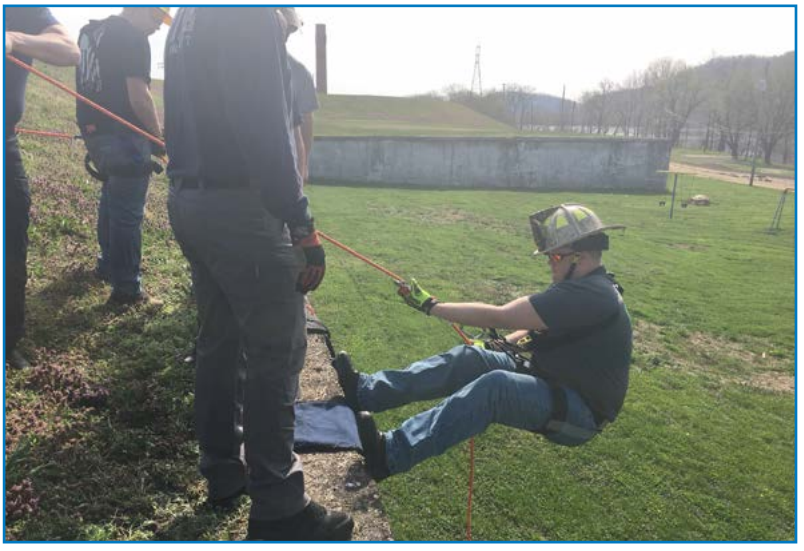
With the help of our friends at Portsmouth Fire Department, full-day tactical training was provided for the fire personnel in attendance. This year's training included high angle rescue, rope rescue, rappelling techniques and more. At the same time, EMS and hospital personnel were involved in hands-on clinical labs. This full day included muscle memory training, advanced airway access labs, live birth simulator, pediatric assessment station and clinical lectures.

The benefits of multi-disciplinary training are endless. Attendees represented local hospital staff, private EMS providers, volunteer firefighters, public township EMS officials, paid fire/EMS departments, flight crew members and nursing personnel.

The goal of the HealthNet Aeromedical Services and MedFlight Tri-State Conference remains the same every year: To thank local fire, EMS and nursing personnel for their service and to provide an opportunity for multiple local agencies to train together and practice the skillsets they use daily when responding to community needs. Don't wait for an emergency transport mission to work together with your local healthcare providers. Train hard and train often with them so future emergency response remains as seamless and safe as possible. ■



Ventilatory training in a clinical skills lab.


Firefighters rappel off of the Portsmouth, OH flood wall.

Ambulance Lights and Sirens Should Only Be Used When the Benefit Outweighs the Risks

Article from ACEP Now
by Anna Bona, MD and Matt Friedman, MD

Sharron Rose Frieburg was 18 years old when a Bloomington Fire Department ambulance ran a red light and struck the vehicle in which she was traveling. She sustained permanent injuries including cognitive impairment and hemiparesis and has persistent difficulty ambulating and speaking.1 Bloomington, Illinois, paid out nearly $5 million to care for Sharon's lifetime of medical needs. The ambulance was transporting a patient with an ankle injury to the hospital.

Potential Benefit Versus Risk

A medical therapy has associated risks and benefits and the likelihood of each should be weighed with every single administration. That evaluation starts in the field when your local EMS agency is responding to a scene. Just like any other medical management, ambulance lights and sirens (L&S) during response to the scene and transport to the hospital should be considered a medical therapy and prescribed for the patient population with a potential for benefit. Clearly, there are conditions that would benefit from L&S medical therapy in which the potential benefits outweigh the risk of harm. However, in order to improve EMS and public safety, as well as enhance the delivery of patient care, it is important to judiciously evaluate the risks and benefits of all aspects of prehospital care, including L&S. The current status quo that an EMS agency responds to the scene greater than 50 percent of its call volume with L&S or transports patients with L&S greater than 25 percent of the time should not be permitted any longer.

The clinical utility of L&S has been questioned since 1953, when studies revealed that 88 percent of patients arriving by ambulance did not require time sensitive medical management.2 A 1994 study found that limiting L&S to 8 percent of transported patients did not increase the mortality rate. Furthermore, a 2014 study determined the number needed to treat with L&S to prevent one patient's death is 5,000. With these findings, the safety, role, and proper utilization of L&S must be evaluated and reconsidered.2

The National Highway Traffic Safety Administration (NHTSA) estimates 4,500 ambulance crashes resulting in 33 deaths annually.3 About 25 percent of the fatalities are of the patients or EMS providers in the ambulance, with the remaining being pedestrian bystanders or other vehicle occupants. EMS providers die from transportation collisions at a greater rate (9.6 per 100,000) than police officers (6.1) or firefighters (5.7). Rear occupants are 2.7 times more likely to die in an ambulance crash, often due to lack of seatbelts. Research has shown that most of these collisions are attributed to human error and thus preventable.

Ambulances inherently raise the risk of collisions due to their increased mass requiring extra braking distance. Even when compared to vehicles of similar size, ambulance crashes occur more often at intersections, with 84 percent involving three or more people. Furthermore, the majority of EMS collisions occur when driving with L&S. A Denver study reported that L&S use accounted for 91 percent of all ambulance crashes.2

Obviously, the concern with unnecessary L&S use is the risk of injury to providers, patients, or pedestrians in a collision. However, there are other negative externalities as well. Studies suggest that L&S use increases patient stress and anxiety, which may result in increased catecholamine surge, heart rate, and blood pressure.2,4 In urban regions, "alarm fatigue" is a concern when drivers don't clear the way for ambulances because they are too frequently confronted with emergency vehicles driving with L&S. If the frequency of L&S use decreased, limited to cases with the potential for real benefit, perhaps alarm fatigue would diminish. Finally, there is the recognition that L&S travel is just not that effective.

The Effectiveness of Lights and Sirens

The major indication for L&S is a presumed significant decrease in response and transport time. However, multiple studies reveal minimal decrease in transit time with L&S use, with an average of 1.7 to 3.6 minutes saved.5 In Greenville, North Carolina, the average reduction with L&S was 43.5 seconds. In congested, urban regions, there is not a marked difference with L&S either. In one urban study, L&S use resulted in a three-minute reduction in Minneapolis. In Washington D.C., there were 3.6 and 3.0 minute faster mean response and transport times with L&S use, respectively. Studies also show that the majority of patients agreed with the practice of non-L&S transport once evaluated by EMS.2

For most conditions, EMS providers can provide timely care on-site or en route to diminish the importance of time saved by L&S transport, thus reducing the risk to providers, patients, and public. In greater than 90 percent of patients, there is no improved outcome from L&S use.2 For some conditions, such as ST-elevation myocardial infarctions, trauma with life-threatening hemorrhage, obstetrical emergencies, or ischemic strokes, the use of L&S use may improve patient outcome by decreasing transit time. However, accurate prehospital notifications to the receiving hospitals may be more beneficial than L&S as this should reduce in-hospital delays waiting for therapeutic interventions. In some cases, prehospital notification has shown an evidence-based improvement in patient outcome by mobilizing the necessary resources.2,6

Additionally, the acoustic aspects of siren effectiveness have been studied in detail.2 Source characteristics such as level, frequency, and directionality, and temporal propagation characteristics such as geometric spreading, atmospheric absorption, topography effects, and background noise are all important components. A

1978 study's conclusion, reaffirmed in a 2012 study, found that siren warnings were only effective when vehicles were traveling in the same direction ahead of the emergency vehicle, when a vehicle was weaving through dense, stationary traffic, or to pedestrians.2 It is clear that sirens may not be as effective as providers may assume and thus cannot be relied on to clear the way.

One retrospective study found that only 5 percent of patients benefit from the time saved by L&S.7 EMS medical directors should focus the training and preparation of EMS providers to provide appropriate medical interventions and to provide accurate and reliable prehospital notifications. Medical directors and operational supervisors for EMS agencies should conduct quality assurance initiatives to ensure a constant assessment of L&S utilization and its effects on patient outcomes.

Emergency Medical Dispatch Risk Stratification

Emergency medical dispatch (EMD) risk stratify 911 calls and initiate a non-L&S response based upon a structured call-taking process, a concept first pioneered by Dr. Jeff Clawson in 1982. In the same year that Salt Lake City instituted an EMD policy to risk stratify calls and identify time-dependent emergencies, they decreased the L&S response by 50 percent. The same year there was a 78 percent reduction in emergency vehicle collisions.2,9

Variability of L&S Use Nationwide

The recognition of safety risks associated with L&S has initiated a change in EMS safety culture. Between 2010 and 2015, the rate of L&S use during patient transport decreased. However, the rate of L&S use when responding to the scene was constant. There is significant variability in the utilization of L&S throughout the country for both response and transport. For example, rural and urban areas are more likely to use L&S compared to suburban regions. Such variable utilization of L&S is likely influenced by EMS agency policies, municipal contracts, traditions within agencies, driver training, and medical oversight.2

It is, unfortunately, common for municipal contracts to require EMS response within eight minutes of dispatch with financial ramifications if the time requirement is not met. In 2015, the EMS agencies in Tulsa and Oklahoma City changed the response policy in order to reduce L&S use to 33 percent of its responses.2 It shifted focus to patient outcomes and quality of care as more important metrics than response time. Importantly, after reduction in L&S rates, there was no associated increased morbidity or change in their cardiac arrest survival rate.2 Additionally, Merlin and colleagues developed a simple medical protocol for L&S transport which reduced an urban EMS agency from 50 percent to 29 percent for patients transported by advanced life support providers.8

Each EMS agency should measure their percentage of L&S use of total 911 call volume and aim to reduce the percentage to the minimum effective rate. The goal for each EMS agency, after comparing national statistics and trends, should be less than 50 percent L&S use during response and less than 5 percent during transports.2 Following these benchmarks would likely improve patient, provider, and public safety without increasing detrimental patient outcomes in most EMS agencies. Providing sound leadership, the ACEP EMS Committee has recommended that EMS medical directors should limit L&S use as much as possible. The role of L&S should be only to "request the right of way," instead of continuous L&S use.

Opportunity for Improvement

Currently, only 17 percent of EMS agencies use L&S for less than 50 percent of all calls; most EMS agencies use L&S for 80 percent of 911 calls.2 Creating EMS and ambulance response guidelines for appropriate use of L&S, with a transport goal of less than 5 percent of 911 calls, should be a priority for EMS agencies and medical directors. L&S should only be utilized when the level of care needed is greater than what EMS providers can offer. As part of their quality improvement measures, EMS agencies should routinely monitor their percentage of L&S use and evaluate their protocols to try to minimize L&S use. Increased training on the hazards and standardized protocols regarding L&S use should be considered as mechanisms to improve EMS safety for providers, their patients, and the public.

References

Fraizer A. After the accident. J Emerg Dispatch. June 5, 2017. Available at https://iaedjournal.org/after-the-accident. Accessed March 19, 2018.

Kupas DF. Lights and siren use by emergency medical services (EMS): above all do no harm. S. Department of Transportation National Highway Traffic Safety Administration Office of Emergency Medical Services website. May 2017. Available at https://www.ems.gov/pdf/Lights_and_Sirens_Use_by_EMS_May_2017.pdf. Accessed March 19, 2018.

Smith N. A national perspective on ambulance crashes and safety. EMS World. 2015;44(9):91-94.

Witzel K. Effects of emergency ambulance transportation on heart rate, blood pressure, corticotrophin, and cortisol. Ann Emerg Med. 1999; 33(5):598-599.

Dami F, Pasquier M, Carron PN. Use of lights and siren: is there room for improvement? Eur J Emerg Med. 2014;21(1):52-56.

Patel MD, Rose KM, O'Brien EC, et al. Prehospital notification by emergency medical services reduces delays in stroke evaluation, findings from the North Carolina stroke care collaborative. Stroke. 2011;42(8):2263-2268.

O'Brien DJ, Price TG, Adams P. The effectiveness of lights and siren use during ambulance transport by paramedics. Prehosp Emerg Care. 1999;3(2):127-130.

Merlin MA, Baldino KT, Lehrfeld DP, et al. Use of a limited lights and siren protocol in the prehospital setting vs standard usage. Am J Emerg Med. 2012;30(4):519-525.

George JE, Quattrone MS. Above all—do no harm. Emerg Med Tech Legal Bull. 1991;15(4). ■

Survival Training: Beyond Building Shelters

By Amanda Ball
Safety Officer
MedFlight

It's 2:00 a.m., cold and there are several inches of snow on the ground. You receive a call to transport a patient from a rural southeastern Ohio hospital to a receiving health system in Columbus. You respond and arrive safely. Your transport leg begins. After a radio call to MedComm, you're on your way. Halfway through the flight, your pilot advises there is a mechanical issue, and you'll be making a hard landing "in that valley," as he points. He says nothing else. What do you do?

This was the scenario posed to our clinical teams during this quarter's Survival Training at our Columbus, OH, headquarters. While true personal survival tactics remain important and incredibly relevant for our teams to know, they're just one piece of a larger operating picture here at MedFlight. We chose to customize our survival training to include and review the multi-level response we would immediately receive not only from our community first responder partners, but from within the organization as well.

Several teams were placed in a 'mockup' of our aircraft configuration in our training area equipped with all clinical, safety and aviation equipment they would normally have with them. A mock patient was included as well as cockpit video of helicopter autorotation to set the tone. Crew members in the audience were asked to remain quiet and take notes for discussion later. The 'mock crash' teams were asked to walk through these steps: What would you include in a mayday call? Can you reach your aircraft survival kit? What if your phones and radios didn't work? What is in your personal survival kit? Would you leave the aircraft? How would you stay warm?

Our goal was to ensure our crews were aware of the multi-level internal and external response to their needs in the event of an emergency. Metro Aviation assisted with scenario creation. Our Communications Center reviewed their response process, including vehicle location and first responder deployment. Our safety team reviewed the company's Post Accident/Incident Plan and its contents, the role and activation of MedFlight Incident Command (IC) structure, and the process of opening an Emergency Operations Center (EOC). To ensure hands-on training included as many in attendance as possible, an 'audience' participated and activated the mock IC themselves with the guidance of our safety team.

What did we learn?

- There is no consistent right way to respond. Each situation will be different from the next, but each team has the skillset, knowledge, training and equipment in place to make the best safety decisions for them.
- MedFlight's 12 critical care bases are scattered throughout the state of Ohio. Great conversation is generated when you train with them all in the same place. Each team has different terrain, transport lengths, patient needs, and weather patterns to work in daily. Their insight and personal accounts are invaluable to each other and to us all.
- Continuously expose your teams to the day-to-day operations of their neighboring divisions. Perspective is a great teacher. A just culture, communication and safety can only improve when the teams have awareness and respect for the responsibilities of the other.
- "Train Like You Fight": A commonly heard phrase in the military and at public service agencies, and it applies to us as well in the air medical/ critical care industry. Customize your training scenarios to fit YOUR agency's needs. Emergency environments will differ based on several factors, and what one air medical company may need will differ from the next.

Safety isn't just an expectation at MedFlight. It's a value that seeps into every move and every decision we make. The well-being of our crews is of utmost importance, and we were happy to see the teamwork of several divisions for this vital survival training. ■

FAA Updates

On April 5, 2018, the FAA in conjunction with Airbus released Revision 7 of the Master Minimum Equipment List (MMEL) for all models of the EC-135. A MMEL contains a list of equipment and instruments that may be inoperative on a specific type of aircraft. The Master Minimum Equipment List is requested from the local Flight Standard District Office, the FSDO, by the operator of an aircraft. This is a list of minimum equipment that has been determined can be inoperable on the type of aircraft and is still capable of safe flight. Once the operator obtains the MMEL from the local FSDO, the MMEL is now the basis for the development of an individual operator's MEL.

The link to the update is as follows: http://fsims.faa.gov/PICDetail.aspx?docId=M%20EC-135%20R7

#StaySafeOnline

Amanda Ball, Safety Officer, MedFlight

Your online privacy and identity as a community member and healthcare provider is very important. It does not take long for information posted online to spread or be taken out of context. We recognize that social media can be a great communication tool and a great way for families and loved ones to connect, but it can also be a hub of misinformation and safety threats. Because of this, we've always taken proactive steps at MedFlight to help protect our employees by setting guidelines for what we post online.

Employee last names are not utilized in posts. "Photo credit" is not given to crew members. All photos shared on MedFlight accounts are reviewed and approved. All social media posts are archived. We drafted an internal social media policy. Why do we go through so many steps? To protect and respect the online identities of MedFlight team members.

What you can do to stay safe online:

1. Don't post anything to your social media accounts that you don't want a stranger to know, you don't want a partnering agency to see, etc.

Everything you post online can be shared... irregardless of your privacy settings.

2. Do not "tag" yourself or team members in agency posts or comments. When you do this, you are opening yourself up to unwanted friend requests or follows from people you may not know.

3. Review your social media privacy settings often. Lock down your account's privacy as much as you can. Posting your address, phone number, etc., is opening yourself up to a lot of risk.

4. Consistently review online safety with your coworkers and community members. Your agency's page can serve as a great example of your transparent communications within itself and for the communities you serve.

Find out more about protecting your online privacy:
www.staysafeonline.org

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Intranet Website Resources:

NinthBrain can be accessed via the worldwide web at suite.ninthbrain.com

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America's Medical Transportation Safety Newsletter

Do you have any ideas for *SafetyMatters*?
Let us know by emailing jeffrey.white@healthnetcct.com