TRB EMS Subcommittee ANB10(5)

EMS Safety Summit 2012

Safety Systems, Strategies and Solutions

What Air Medical Can Teach Us?

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What Air Medical Can Teach Us

I. Policies and Practices

II. Learning for Our Mistakes

III. Fatigue Mitigation

IV. Safety Management Systems

V. AMRM

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I. Policies and Practices

Securing ourselves, our patients and our equipment

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Securing the Patient with 3 cross straps

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II. Learning From our Mistakes
Air Medical Accidents

Oh look we know how many
And the probable cause for each accident !

70 - 80% caused by Human Error
Most common factors:
Weather and dark night conditions
VMC into IMC - 74% resulted in fatalities

According to IHST
54% of the EMS accidents occur at NIGHT even though night time flights account for only 35% of the total flights

"Nighttime accidents are more likely to be fatal. Air ambulance accidents that occurred at night were almost four times more likely to result in fatalities than those occurring during the day."
Dr Patrick Veillette

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2009 NTSB Recommendations

Adopt A System Safety Culture - SMS

Use of IFR, HTAWS and night vision goggles

A Procedure Weighted Risk Avoidance Program

Review Weather Minimums

Improve Education on Weather Com / Dispatchers

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Overlooked factors that apply to air and ground

We have addressed level of experience, training, and technology but not sleep deprivation in assessing risks specific to EMS.

NTSB gets a 72 hour history prior to an accident but often does not detail how much sleep and in what time frame prior to reporting for duty.

In one of the most recent fatal accidents, the pilot came on night duty after working all day on a home project.

24/7 OPERATIONS

- In 1995, the NTSB found that across all transportation modes, approximately 30% of the accidents are fatigue related.
- Night shift workers are already at a higher risk for injury and errors. In a 2005 study (by Folkland, Lombardi and Tucker) found that workers in a series of night shifts generally sleep poorly with each successive night shift worked – by the 4th night, risk is 36% above the 1st night.
- EMS Pilots work schedule is usually 7 nights on in succession and many of the EMT drivers and paramedic ground crews are working more than 1 job.

In Addition, EMS also have Emergency Response Expectations

1st Known study of fatigue associated accidents was in 1896 of wagon drivers: (Patrick and Gilbert)

They found contributing causes were:
- **Economic pressures**
- **Societal demands for faster deliveries**

SOUND FAMILIAR???

In all studies, fatigue results in:

Slowed reactions

Poor judgment

Reduced information processing

Inability to perform a task at a high sustained level of accuracy or safety

So what do we do?
III. Fatigue Mitigation

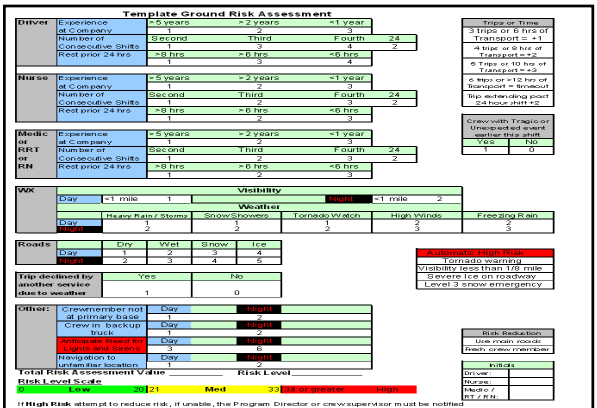
Scheduling Practices - Demonstrate strategies to minimize duty-time fatigue, length of shift, number of shifts per week and day-to-night rotation.

The physical base of operations includes an appropriate place for uninterrupted rest.

Medical personnel must have the right to call "time out" if the team member (or fellow team member) determines that he or she is unfit or unsafe to continue duty, no matter what the shift length.

Management must monitor transport volumes and personnel's use of a "time out" policy.

Fatigue Education
Fatigue Risk Assessment Tools.



Recommend adding fatigue risk assessment (Stanford sleepiness scale)

IV. Safety Management Systems

The Safety Management System is proactive in identifying risks and eliminating injuries to personnel and patients and damage to equipment and includes:

1. A statement of policy commitment from the accountable executive
2. A non-punitive system for employees to report hazards and safety concerns
3. A system to track, trend and mitigate errors or hazards
4. A system to track and document incident root cause analysis
5. A Safety Manual
6. A system to audit and review organizational policy and procedures, ongoing safety training for all personnel (including personnel (including managers), a system of pro-active and reactive procedures to insure compliance, etc.

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Air Medical Resource Management - AMRM

CRM specific to air crews and includes:

- Communication processes and Decision Behavior
  - Briefings
  - Inquiry/advocacy/assertion
  - Crew self critique
  - Conflict resolution
- Team Building and Maintenance

- Workload management and Situation Awareness

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Summary

We can learn from each other: Ground and Air - we are all moving while caring for patients.

Safety vigilance for ground is just as important as for air.

We need the data for ground incidents and accidents in one strategic location so we can track, trend and analyze as we do for air accidents to mitigate the risks and hazards.

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