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FACTORS AND ISSUES ASSOCIATED WITH RURAL AMBULANCE CRASHES




Literature Review

- 28 articles in the peer reviewed literature
 - Articles categorized in 4 areas
 - Description of the problem
 - Safety issues
 - Lights and siren use
 - Legal and ethical use
- 




Findings

- Driving an ambulance is dangerous
 - An estimated 6,500 crashes per year
 - 20/day
 - 1 every hour
 - More crashes than law enforcement and fire counterparts
- 





Contributing Factors

- Volunteers with less experience
 - Inadequate screening of drivers
 - Inadequate training
 - Fatigue and distraction
 - Poor vehicle design
 - Limited knowledge of driving laws
 - No policies and procedures
- 



Lights and Sirens

- Saves little time
 - 30 miles @ 70 MPH = 25.7 minutes
 - 30 miles @ 80 MPH = 22.5
- Increase crash risk
 - 2-3 times
- Time savings is of no value in all but the most extreme (salvageable) clinical conditions



Lack of Safety Restraint Use

- More likely to die in ambulance than similar size vehicle for other purposes
- Providers, patients and family unrestrained
- Use in front good
- Use in back variable from less than 5% to more than 95%





Rural Crash Characteristics

- More likely to result in injuries
- More likely to involve poor road conditions
- More likely to be the striking object (rather than being struck)




Economic Costs

- Estimated at more than \$500,000,000/yr.
- \$900,000 - \$1.2 million per fatality
- Highest patient safety risk
- 13 times more likely to result in lawsuit than errors in care
- Can devastate a rural EMS agency




Educational Solutions

- Required training
 - Better training
 - Simulation training
- 



Enforcement Solutions

- Policy development and implementation
 - State level
 - Agency level
 - Creation of a culture of safety
- 




Engineering Solutions

- Safer ambulance design – driven by science
- Better markings/lighting
- Work friendly patient/provider compartment
- Intelligent transportation solutions
- Quality feedback systems, e.g black boxes





What Can You Do Today?

- Adopt and enforce a lights and sirens response protocol
 - Wear restraints in the back
 - Install a quality feedback system
 - Screen drivers before they drive
 - Train and monitor drivers
- 



Article

Sanddal, N.D., Albert, S., Hansen, J.D., and Kupas, D.F. (2008). Contributing Factors and Issues Associated with Rural Ambulance Crashes: Literature Review and Annotated Bibliography. *Journal of Prehospital Emergency Care* 12(2) 257-267.

