

JACEP OPEN PODCAST SUMMARY

Emergency Medical Services

Testing truisms in EMS

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The practice of medicine is full of “well-known” truisms. Often, these truisms are based on evidence that is not elusive as much as just not considered. Some introspection presents us with a few opportunities to untangle such truisms and glean some additional insight. In the latest episode of the *JACEP Open* Podcast, we discuss 2 such papers from the journal that investigate 2 pre-hospital practices based on well-known truisms: only paramedics can give epinephrine and mechanism of injury is highly predictive of severe injury.

Although the use of epinephrine in out-of-hospital cardiac arrest is still controversial, there is certainly a suggestion that earlier use is associated improved outcomes.^{1,2} Getting epinephrine administered early is often a function of the design of the emergency medical system (EMS). Most EMS agencies are designed around the assumption that epinephrine use requires a paramedic. Unfortunately, paramedics are frequently in short supply in rural communities, something that may delay epinephrine administration. In 2014, Dr. Jared Bomba et al³ looked at this truism on a large scale in their paper “Administration of epinephrine by advanced emergency medical technicians for out-of-hospital cardiac arrest in a rural EMS system.” They evaluated the impact on time to epinephrine and survival of the state of Vermont’s change allowing advanced emergency medical technicians to establish IO access and administer 1:10,000 epinephrine. In this mostly rural state with few paramedics, they found that 31% more patients received epinephrine at any time during the prehospital resuscitation and the time to initial administration decreased by a median of 2.6 minutes. This observational study dispelled the myth of that paramedics are required for out-of-hospital epinephrine administration.

The second mythical truism evaluated is the value of “mechanism of injury” (MOI) and its ability to predict injury severity from trauma. His-

torically, significant MOI, such as rollover collision, was seen as prima facia evidence of severe injury. Perhaps when vehicles were made of solid steel this may have been justified. But today’s vehicles are heavily engineered to absorb impact and divert energy away from their human occupants. Based on the improved safety of cars, the Centers for Disease Control and Prevention removed rollover collisions from trauma criteria in 2011. Dr. Moriarty et al of Brisbane, Australia tested the impact of removing rollover mechanism from their EMS trauma triage criteria in their paper entitled “Isolated vehicle rollover is not an independent predictor of trauma injury severity.”⁴ Using data from their own trauma center and the Queensland Ambulance EMS system, they found that the rollover itself was not as important as secondary impacts or patient ejection. Rollover collision plus secondary injury resulted in a 252% increase in major injury compared with an isolated rollover accident. Indeed, isolated rollover collision was associated with lower odds of significant injury than non-rollover collisions.

As with all truisms, we should remain open to contradictory evidence. These 2 papers in *JACEP Open* help shed additional evidence to improve our practice.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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