Morbidity and Mortality: What's Hurting and Killing EMS Providers and What We Can Do About It

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How dangerous is EMS?

EMS has a rate of work-related injuries three times the national average.

(Maguire et al., *Prehosp Disaster Med*. 2013)

8% of injuries result in a loss of work.

Almost 20% result in a loss of work of one month or more.

(Maguire et al., *Prehosp Disaster Med*. 2013)

This is bad.

but…

There are a relative few causes for these injures (and deaths).

and…

We have fixes for some of the causes.

What I'm going to Cover Today

I. What hurts us- morbidity

II. What kills us- mortality

III. What we can do about it

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Fix the biggest offenders, then move down the list.

#1 cause
#1 concern

I. Morbidity

So what's our #1 cause?

Sprains and strains.

To the lower back.

From lifting patients.

Sprains and strains.
To the lower back.
From lifting patients.

35% of injuries

≈ 60% of missed work days

So 1/3 of our injuries, accounting for almost 2/3 of lost work days, are from a single cause.

But back strain isn't a sexy topic.

What's probably the #1 thing we worry about?

Patient assaults.

Should we be?

Yes.

We’re at elevated risk.

For assaults leading to lost work:

23X the national average for all occupations.

7x times higher than other health care providers.

but…

But the absolute risk is relatively low.

≈100 per year resulting in loss of work

II. Mortality

What's #1?

Transportation accidents

≈80% of all fatalities

Aircraft incidents are the most common, followed by highway incidents.

Aeromedical is specialized transport

They’re well aware of the problem.

Focus on ground transportation.

72% of those killed in ambulance accidents were in the rear compartment.

So our #1 killer is ambulance crashes, and the providers in the back are most often killed.

What's probably the #1 thing we worry about?

Suicide

(Possibly our #1 killer)

Rates of contemplating (37%) or attempting (6.7%) suicide are ≈10X higher than the general population.

III. What can we do about it?

My focus:

- Factors under our control
- Interventions we can actually implement
- Interventions that actually work

Interventions

- Sleep
- Assist
- Buckle

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1. Sleep/ fatigue management

There is no single more powerful intervention to reduce injury and prevent death than sleep/fatigue management.

Let’s look at morbidity and mortality:

Morbidity

Sprains and strains

Fatigue increases
perceived effort

3.5X the likelihood of a safety-compromising behavior

2X the chances of injury

What about patient assaults?

Fatigue lowers
situational awareness.

Mortality

Ambulance accidents

Fatigue is cited a common factor in ambulance crashes.

Sleep deprived = drunk?

17h = 0.05 BAC

24h = 0.1 BAC

What about suicide?

Sleep problems predict the development of psychiatric problems following a traumatic experience.

Reduced sleep is associated with increased suicidal ideation.

So what do we do about it?

There is no one solution.

Agencies are different.

Evidence-Based Guidelines for Fatigue Risk Management in Emergency Medical Services

Patterson et al. *Prehospital Emergency Care*, 2018 22:sup1, 89-101.

Shift management

Naps

2. Assist

Morbidity

Minimize back strain

Most effective solutions involve mechanical lift assistance.

Only a partial solution for EMS.

The key is to minimize the weight per person.

Get help.

Most issues requiring lifting are **not** time-sensitive.

Other staff?
Family?
PD?
Fire?

3. Buckle

Mortality

Ambulance crashes are the biggest mortality risk for most agencies.

Lots of potential strategies for improvement.

Focus on seatbelt use.

We are pretty good about using seatbelts in the front of the ambulance.

We are horrible using seatbelts in the back of the ambulance.

Why?

Patient care.

Technology to the rescue?

In the meantime…

Seatbelts should be the default.

Need a good reason to temporarily take it off.

To summarize and finish up:

We have to make hard decisions about where to put our effort and resources.

There a only a few causes for the majority of our injuries and deaths in EMS.

We need to focus.

On the few causes.
On the interventions with the most impact.

Focus on making the big 3 changes happen:

- Sleep
- Assist
- Buckle

If you have to pick ONE?

Sleep/fatigue

Once we get these handled,
we can move to the next
on the list.

But not until.

We CAN make a meaningful reduction in injuries and deaths in EMS.

But we have to act.

So act.

If you need any help,
get in touch.

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Thank you.

Questions?