

## Managing Fatigue in EMS Operations

Fatigue impacts personal health as well as the ability of responders to perform key functions including patient care, incident command and vehicle operations. Studies have shown that 17 hours of sustained wakefulness is equivalent to a blood alcohol level of 0.05 percent and that after 24 hours, it is equivalent to 0.10 percent – more than the legal limit for driving.<sup>1</sup> Despite this evidence, efforts to move to shorter shifts continue to face significant resistance and the number of EMS agencies using 24- and 48-hour shifts continues to rise.<sup>2</sup>

### Contributing Factors

ESOs often choose a 24-hour shift structure for economic reasons or for convenience of the staff or department. However, in a busy ESO these decisions must be made with consideration of patient and responder safety. These decisions are often compounded by:

- Shift workload
- Insufficient staffing
- Call offs
- Moonlighting (34% work multiple jobs<sup>3</sup>)
- Consecutive Shifts
- Personal schedules – Fit for Duty Policy

### Effects of Fatigue

Fatigue significantly affects a responder's health and performance. Alarming, research has found that more than half of EMS responders report severe mental and/or physical fatigue.<sup>3</sup> A leading cause of fatigue is sleep deprivation, which has been linked to cardiovascular disease, mood changes, obesity, and increased resistance to insulin, among other conditions.<sup>3</sup> Additionally, EMS fatigue has a potentially severe impact on performance and patient care. One study shows that the odds of a medical error or adverse event are twice as high among fatigued EMS responders compared to non-fatigued responders.<sup>3</sup>

### Fatigue Mitigation Strategies

Extended shifts with high call volume create a significant risk to both employees and the public citizens they intend to serve. While decreased call volume and sleeping on duty may lower the exposure, consideration should be given to the following:

- Adopt fatigue/sleepiness survey instruments to monitor fatigue in personnel<sup>3</sup>
- Avoid rotating shifts which change rapidly (day/night)
- Monitor the responders average utilization rate which should be less than 40% per shift<sup>2</sup>
- Restrict shift lengths to less than 24hours in duration<sup>3</sup>
- Provide an opportunity to nap while on duty<sup>3</sup> along with a quiet room to rest after a busy shift and before commuting home
- Inform responders about maintaining a proper diet
- Provide access to caffeine as a fatigue countermeasure<sup>3</sup>
- Educate responders on sleep health and the dangers of fatigue to mitigate fatigue and fatigue related risks<sup>3</sup>

## Conclusion

There is no one simple solution to the problem; and, what may work for one agency may not work for another. The difficulty is realizing even ESOs with a lower average call volume sometimes have a busy shift leading to an increased chance of a fatigue related incident. Traditional schedule templates and demand from increased call volume cannot disregard the well-demonstrated impact of fatigue on an organization's safety results.

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<sup>1</sup>The Joint Commission. (2011) Health care worker fatigue and patient safety. Sentinel Event Alert. 48(14):1-4. Retrieved from [https://www.jointcommission.org/assets/1/18/SEA\\_48.pdf](https://www.jointcommission.org/assets/1/18/SEA_48.pdf)

<sup>2</sup>Fatigue, Scheduling are Critical EMS Challenges. (2017) EMS Trent Report. EMS1.com. Retrieved from <https://www.ems1.com/ems-trend-report-2017/>

<sup>3</sup>Dead Tired Evidence-based recommendations for Combating Fatigue in EMS. (2018) JEMS Vol. 43 No.2; 26-33 Retrieved from <http://www.jems.com/articles/print/volume-43/issue-2/features/evidence-based-guidelines-for-combatting-fatigue-in-ems.html?c=1>