



Case study: Fatigue-related ambulance RTC

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I am a newly qualified paramedic, having made a late career change into pre-hospital care in 2016, following an internal student paramedic and DipHE pathway. My previous background includes military, overseas youth expeditions, education, and youth ministry; all involving a greater or lesser degree of responsibility for risk management and safety culture.

This case study describes a fatigue related RTC occurring at the end of a night shift whilst driving back to base from an out-of-area acute hospital. It will outline the circumstances of the accident and then focus on the learning. Despite the fact that much of my earlier working life involved significant health and safety responsibilities, often in challenging environments, being at the centre of an incident myself provoked a wide range of emotions and reactions, the most constructive of which has been to share what I've learnt in a bid to help colleagues and other road users avoid, in so far as possible, further fatigue-related accidents. My purpose in sharing this case study is to highlight the risks and suggest preventative strategies, particularly those that can be adopted by 'front line' clinicians. If we do not educate about sleep optimisation and fatigue management among colleagues, nor push for systemic changes within our ambulance services in order to reduce risk, then it is probably only a matter of time before a more serious – even fatal, fatigue-related accident occurs in an ambulance service.

I had driven a 50-mile blue-light inter-facility transfer before clearing at 03.00 for a late break at the nearest ambulance station. After our 30-minute break we were allocated a C2 call 20 miles away which took us back to the out-of-area acute hospital. Our journey to base station would be 70 miles, going via our

local acute hospital to drop off the nurse who had accompanied the patient from the original transfer, and would take just short of two hours on mostly single-carriageway rural roads. I was driving again and felt no more tired than I normally would at the end of a night shift, although my crewmate and I agreed we would need to swap at some stage. I considered stopping for a coffee after 30 minutes but as I was still feeling OK, I opted to continue: I did not want coffee unnecessarily as it might affect my sleep once I got home and how rested I would be for the following night shift. Around 45 minutes into the journey I noticed signs of fatigue and began thinking of where we could safely stop to swap driving. Unfortunately, we never got to that point.

My first recollection of the accident was crossing from the right-hand lane into the verge, with the vehicle continuing into a tall hedgerow, decelerating rapidly to a stop with airbags deploying. As my crewmate and I exited via the passenger door and the nurse via the rear door, we noticed a woman sitting in the road behind us and realised that another vehicle had been involved. Thankfully, there was no-one else in the car, and none of us were badly hurt, but both ambulance and car were write-offs. We attended to the driver of the car until another ambulance arrived, along with the duty manager, police, and fire service.

Analysis

The overall factors contributing to the accident were:

- an unrecognised level of fatigue and consequent inadequate prevention and management of fatigue; and,
- operational systems resulting in a long drive back to base at the end of a night shift.

The role of fatigue

Anecdotal evidence from colleagues suggests that fatigue is not an unusual experience and that 'near-misses' either towards the end of shift or on the drive home are under-reported. It is possibly widespread: a survey of trainee hospital doctors revealed that more than half had experienced an accident or near miss when driving home after a night shift (McClelland et al, 2017). Some evidence relating to fatigued driving is alarming:

- "Commonly experienced levels of sleep deprivation" can reduce driving performance in a similar way, and extent, to levels of alcohol intoxication incompatible with safe driving (Williamson and Feyer, 2000, p653);
- Drivers are not good judges of level of sleepiness: accident risk factors include night shift driving, driving after being awake more than 15 hours, and frequent night time driving (especially between 00.00-06.00) (Stutts et al, 2003);
- Capanna et al (2017) identified that night shift exposure made doctors more prone to risk taking;
- Barger et al (2005) found the odds of being involved in an RTC after an extended shift were more than double that after a non-extended shift and that "the number of fatigue-related crashes increases in proportion to the time spent on task" i.e. longer drive, greater risk; and,
- There seems to be a 45-minute tipping point after which fatigue-related behaviours (e.g. lane excursions) increase dangerously. A study of post nightshift driving demonstrated objective measures of impairment occurring after 15 minutes with near-crash events occurring after 45 minutes (Lee et al, 2016).

Walker (2017) puts fatigued driving into clear perspective, stating that "vehicle accidents caused by drowsy driving exceed those caused by alcohol and drugs combined" and noting that whereas inebriated drivers may brake or manoeuvre late, a driver experiencing a 'micro-sleep' does neither and that drowsy-driving accidents are thus often more serious.

Operational systems

It is not only transfers that take ambulances out of area: it is not unusual in the rural area where I work for crews to 'migrate' into other localities where they might be retained, responding to 'stacked' calls. Thus, there are several common scenarios where crews have a long drive home, often at the end of a shift. There is a balance of risk to be made here between the risk to patients of a delayed response time and the risk to ambulance crews, and the public, of fatigued staff undertaking long drives in the final hours of a night shift.

The wider picture

A growing movement within the NHS recognises the importance of sleep optimisation and managing fatigue while on shift, including the Association of Anaesthetists #FightFatigue campaign and the BMA's 'Fatigue and Facilities Charter'. More specifically in the pre-hospital sector studies have been taking place with some initial results from a study in SCAS published online by the AACE (2019), and a study undertaken by the University of East Anglia in collaboration with EEAST.

The learning

Good advice on optimising sleep and managing fatigue is provided in a BMJ infographic and from the Association of Anaesthetists [see links at the end of this article], who have been active in campaigning to #FightFatigue in the NHS. Examples include:

Aiding sleep

- Take regular exercise;
- avoid screen time and bright lights 30-60 mins before sleeping;
- improving darkness by fitting blackout curtains; and,
- avoid alcohol: it might make you drowsy but can hinder good sleep.

While on shift

- Stay active;
- keep well hydrated and eat healthy snacks;
- avoid caffeine in the last few hours; and,
- take a 10-20 minute restorative nap.

Mitigating risk

Plan the journey, agreeing a 'how to get home safely' strategy which includes consideration of:

- places to take a break;
- driver-swaps at least every 45 minutes;
- heating control and radio – to be stimulating not soporific.

Be alert to signs of fatigue which include face touching and arm stretching. If you need to wind the window down or sing or do any other action to stay alert, you will have passed the point where you should have stopped for a break.

Do not drive if a dynamic risk assessment suggests it is unsafe to do so: utilise existing systems through local management or control room to find an alternative way home.

Be pro-active with your control room to try and get back to your home locality, especially when getting late into a night shift. Try to avoid the long journey being the last one.

Report issues to management (e.g. DATIX) and, if necessary, to the HCPC under standards 6 and 7 of their Standards of Conduct, Performance and Ethics (HCPC, 2016; Health Safety and Wellbeing Partnership Group (HSWPG), 2020).

Corporate learning

My accident should be viewed as a "near miss". This is not to underplay the consequences or my culpability, but a recognition of how much more serious the consequences could have been. Such a near-miss should prompt a risk assessment review: on the matrix it would rate at the top end of the consequences/severity scale, identifying that additional controls would be needed to reduce the likelihood. Without a review and consequent additional controls, it is just a matter of time before history repeats itself with perhaps more serious consequences.

Consequences

The consequences of my accident included minor injuries, two written-off vehicles and the loss of police/fire/ambulance time and

resources: it does not take much to imagine how much worse they could have been. The impacts on the driver are perhaps less obvious but included:

- stress and anxiety;
- driving reassessment;
- occupational health referrals and investigations;
- prosecution for driving without due care and attention with consequent fine and points (tiredness is neither a defence nor mitigating factor: it indicates greater culpability and increases the penalty);
- an internal disciplinary process; and,
- self-referral to the HCPC.

Summary

Fatigue is an inevitable risk for ambulance clinicians, especially when working night shifts. This risk may well be underestimated because tired people are poor judges of how fatigued they really are, and fatigue-related near misses are likely under-reported and will likely continue to be until a 'just culture' becomes truly embedded in ambulance trusts. Although ambulance services should take reasonable steps to ensure the safety of their employees, our safety is also our responsibility. Front-line clinicians can mitigate risk to themselves and others by optimising sleep, managing fatigue while on shift and utilising existing systems to help get home safely. We should also be prepared to suggest and advocate for systemic changes that could reduce fatigue-related risk and, when necessary, act on our own dynamic risk assessments and refuse to drive if we consider it unsafe.

Further reading

Association of Anaesthetists #FightFatigue resources:

<https://anaesthetists.org/Home/Wellbeing-support/Fatigue/-Fight-Fatigue-download-our-information-packs>

BMJ Optimising sleep for night shifts infographic:

www.bmj.com/content/360/bmj.j5637

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References - Available on request