

Editorial

For nature cannot be fooled. Why we need to talk about fatigue

The willingness of NASA employees in general to work excessive hours, while admirable, raises serious questions when it jeopardises job performance, particularly when critical management decisions are at stake.

– Report of the Presidential Commission on the Space Shuttle Challenger Accident, July 1986 [1].

On 28th January 1986, the United States Space Shuttle *Challenger* exploded 73 seconds after launch, killing all seven crew members on board. While the immediate cause was a critical flaw in the O-ring seal in one of the shuttle's rocket boosters, the detailed inquiry into the disaster made clear that the prevailing culture and organisational structure of NASA itself were key factors in the loss of the shuttle and her crew.

In particular, attention was drawn to the process around the final decision to proceed to the Shuttle's launch: "*failures in communication ... resulted in a decision to launch Challenger based on incomplete and sometimes misleading information, a conflict between engineering data and management judgment, and a NASA management structure that permitted internal*

flight safety problems to bypass key Shuttle managers" [1].

The critical meeting where the launch decision was taken was attended by 13 individuals. Many had had significantly reduced sleep and irregular working hours in the days before the launch. Many were fatigued. The people tasked with making the crucial decision as to whether it was safe to launch *Challenger* were all likely feeling the effects of being tired, with impaired insight and judgment. In retrospect, the *Challenger* Report concluded that the meeting had 'provided a clear opportunity for postponement', but the decision to launch was made.

When we analyse data, assess risk, or make critical decisions when we are tired, our ability to do so is impaired. The effects of fatigue creep up on us without us necessarily noticing. Even relatively mild sleep deprivation and fatigue can have profound effects on how we think and feel and, crucially, some of the first things to be impaired are our senses of insight into our own functioning [2], and our empathy [3]. In a high-intensity healthcare environment such as an operating theatre, a resuscitation room, or an intensive care unit, those subtle differences can have profound consequences.

Like NASA in the 1980s, the NHS is under significant pressure, tasked with meeting demanding

targets in an increasingly challenging environment, affected by both social and political factors. The focus remains predominantly fixed on end results, the same drive for the 'go factor' that pushed NASA to launch shuttles into space while ignoring warning signals of a system dancing on the edges of disaster.

Headline targets, such as the 4-hour target in Emergency Departments, and 18 week referral to treatment times for key specialties, continue to become harder to achieve, demonstrating increased pressure within the NHS system. NHS teams continue to strive to deliver safe, effective, efficient healthcare to the best of their abilities, 24 h a day, 7 days a week, but the effect on staff of doing so is increasingly evident.

The survey by McClelland et al. published in this issue of *Anaesthesia* [4] looks at the impact of working in the modern NHS from the perspective of anaesthetic junior doctors, but its findings will be familiar to anyone working in the NHS. It paints a stark picture of how prevalent fatigue is amongst those our system depends upon; how high a toll it exacts, both professionally and personally. Terrifyingly, how little organisational awareness of, and response to, the magnitude of the problem there is.

This editorial accompanies an article by McClelland et al., *Anaesthesia* 2017; 72: 1069–77.

The NHS depends absolutely on its staff – but our staff are not an infinite resource. Where there are pressures, where resources do not meet demand, NHS professionals often attempt to ‘fill in the gaps’, from their own personal reserve. While this may address short-term problems, when sustained it leads to personal stress, low morale, ill health and burn-out. It can ultimately lead to leaving the profession altogether.

The ‘hero attitude’, that the needs of those who need healthcare are always more important than the needs of those delivering it, is widely prevalent. It is well-intentioned, but wrong.

In an aircraft emergency, the priority is to put your own oxygen mask on first before helping others. We must acknowledge that NHS services can only be safely delivered by paying attention to the same principle. A good marker of this is the ability of staff to take regular breaks. Regular breaks are essential to delivery of safe, effective patient care.

Patients are always best-served by NHS staff functioning at their optimal level. A doctor or nurse who has worked a 12-h shift without a break is far from at their best, yet this practice is widely prevalent in today’s NHS. This was reinforced by the General Medical Council in December 2016 following the publication of the annual junior doctors’ survey results, which highlighted the risk of significant harm to patients from sleep-deprived doctors [5].

Breaks are not optional and, especially when systems are under pressure, are not a luxury for staff – they are fundamentally there to protect our patients. This is particularly

important when considering work carried out at night. We are not evolved to be awake at night. Our circadian rhythm, the powerful drive that helps regulate wake and sleep, means that we are at a physiological low when working at night. Especially when compounded by the cumulative effects of sleep deprivation from poor quality daytime sleep, simply maintaining wakefulness can be a struggle, let alone functioning in a fast-moving, pressured, demanding environment.

International travellers experience this as jet-lag, the dislocation of mind and body which causes irritability, fatigue, aches and pains, clumsiness, and slowing of mind and memory, and know that it can take days to readjust the body clock to feel ‘right’ again.

When we have been awake for 16–18 h, our reaction times are similar as when blood alcohol levels are at the legal drink/drive limit [6]. We process information more slowly; we adapt to new challenges less quickly. We make riskier decisions and, critically, our insight into how much fatigue affects us is also impaired [2]. Errors in care and judgment become more likely.

The personal consequences of that can be catastrophic. Doctors and nurses are at significantly increased risks of road traffic accidents driving home from night shifts. Fatal crashes are still too common [7, 8]. Many nightshift workers have a ‘near-miss’ story, as McClelland et al. demonstrate again here.

At Guy’s and St Thomas’ NHS Foundation Trust, we have been working to address some of these

factors. All new medical staff starting within Evelina London Children’s Hospital, and all new Foundation doctors within the Trust, receive teaching on how to manage the impact of working night-shifts as part of mandatory induction. This teaching has been taken up by the London School of Paediatrics, and is incorporated into mandatory induction for all new paediatric ST1 trainees within the London deanery. Development of similar initiatives is being supported by the Royal College of Paediatrics and Child Health across the rest of the UK. The teaching is summarised in a recent publication [9], and online resources [10].

Personal strategies to address fatigue must be matched by strategies and support from employers. In March 2017, our Trust launched a campaign, ‘HALT: Take A Break’ [11], intended to emphasise the critical importance to delivery of safe, effective, efficient care within our hospitals of all staff being able to take regular breaks as part of their working shifts.

Supported by senior clinical and management teams, the campaign aims to work with all staff to challenge the widely-prevalent culture within the NHS that it is ‘heroic’ to work without breaks, and to emphasise that only by looking after our own staff as a priority can the NHS continue to try to meet the challenges faced in delivering 21st century healthcare. Senior clinicians within the Trust will support individuals and departments to identify areas where practice can be improved and supported. Achieving these standards is difficult, however the Trust makes it clear that it is not

acceptable to tolerate an NHS-endemic culture where those responsible for patient's lives are working under pressures that increase risk to themselves and their patients.

These principles are widely supported by key organisations, including the Department of Health, the Care Quality Commission [12], the Royal College of Physicians [13], the Royal College of Nursing [14], the Royal College of Midwives [15] and the General Medical Council [5]. The challenge is in translating that support into meaningful changes at ground level which can be sustained.

The new contract for Junior Doctors in England makes clear the fundamental importance of doctors getting breaks during their shifts to both patient and staff safety [16]. It includes, through the exception reporting process and the Guardians of Safe Working, a mechanism for junior doctors to highlight where local resources do not meet the demands they face in their daily jobs. Both the GMC [17] and the British Medical Association [18] have made clear their support for doctors to use exception reporting to highlight where change is needed.

Doctors are not unique in their vulnerability to fatigue. The standards set out in the new junior doctor contract as minimally acceptable for rest and facilities should equally apply to all staff working in similar healthcare environments [14, 15].

As healthcare professionals, we are used to thinking about our patients' physiology, and how we need to correct and compensate when physiology is off balance or under strain. Particularly when we

think about working at night, we must be better at recognising when our own physiology is under strain, affecting our ability to safely and effectively deliver high quality patient care, and take steps to address that, at both a personal and systemic level.

Remembering that we are not super-human, that our own health and ability to function is affected by the pressures of the jobs that we undertake, and that stopping to take breaks and rests is an essential part of delivering care to our patients, has never been more important. For doctors, the GMC Duties of a Doctor remind us that it is the responsibility of individuals to make patient safety their first concern, and to take prompt action if that is compromised. We should not hesitate to point out when it is our own working conditions that pose a potential risk to patient safety – and our own.

The survey published here is a resounding reminder that to safely, effectively and efficiently look after our patients, we must also look after ourselves too [4].

Re-establishing the vital importance of something as basic as regular breaks for all staff is an important step in challenging the culture within the NHS about how we work. The HALT campaign at GSTT is an example of how it can be possible to put in measures to protect staff, while still delivering care in an increasingly challenging environment [11].

NASA had been aware of potential problems with the O-ring seals for years prior to the loss of *Challenger* and her crew, but the

pressure to keep the shuttle fleet flying and delivering on its ambitious goals, both political and scientific, meant that they were ignored.

Richard Feynman ended his contribution to the *Challenger* Report with these words: "*For a successful technology, reality must take precedence over public relations, for nature cannot be fooled*".

The warning signals are sounding all across the NHS.

Morale is low, burnout is prevalent, health suffers, and fatigue, and all its consequences, lies at the heart of it, unacknowledged for too long. We still need to learn the lessons from *Challenger*: we must acknowledge reality, because we cannot fool the nature of our physiology.

It's time to halt, take a break, and redraw the relationship between patient care and self-care. Self-care isn't an optional luxury. It must sit at the heart of what we do, to ensure our teams can continue to rise to the challenges of working in the 21st century NHS, to give our patients the best of both ourselves, and the organisation so many of us are proud to be a part of.

Like NASA, the NHS is characterised by employees who will willingly give of themselves and work in excess of what they are formally expected to, but we must acknowledge that this attitude can jeopardise performance, and challenge the culture that permits it – particularly when, as so often, critical decisions are at stake.

I commend the Association of Anaesthetists of Great Britain and Ireland for taking these steps, and look forward to seeing continued

development of the ideas discussed in this important paper.

Acknowledgements

No external funding or competing interests declared.

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Keywords: doctors; fatigue; rest facilities; shift-work; sleep

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doi:10.1111/anae.13982