

Battling Burnout: Chronic work-related stress in radiology

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Introduction

'Burnout' is a term we hear increasingly frequently within the UK healthcare industry. It describes a state where chronic work-related stress leads to symptoms of mental and physical exhaustion, and feelings of detachment, which affect an individual's work, home and social life. [1]

Burnout in Medicine generally and Radiology in particular is a growing concern. The General Medical Council's latest annual survey of the UK's trainee doctors, published in July 2022 and based on responses from around 67,000 medics, found that "the risk of burnout is now at its worst since it was first tracked in 2018" due to heavy workloads, in part because of the impact of the Covid-19 pandemic. The Royal College of Radiologists (RCR) 'Care is not just for the patient' support and wellbeing report April 2021 highlights the prevalence of overwork and fatigue, stating 'most people working in healthcare have experienced the effects of exhaustion or disengagement, either directly, or observed in one of our close colleagues.' [2] The RCR warns that stress and burnout are affecting Radiologists' quality of life, impeding communications between colleagues and patients, and ultimately affecting patient safety and experience.

In a recent study published by the British Medical Journal (BMJ) [31], which analysed 170 previous observational studies of the links between burnout, career engagement and quality of patient care, authors Hodkinson et al found that burnout was associated with a threefold to almost fourfold increase in the odds of job dissatisfaction and regrets about career choice, that physicians with burnout were three times more likely to consider quitting than staying in their jobs, and that burnout was associated with significantly lower productivity.

"THE RISK OF BURNOUT IS NOW AT ITS WORST SINCE IT WAS FIRST TRACKED IN 2018"

Understaffed Radiology departments, already dealing with the stress and struggle of the pandemic, are now faced with a steep rise in work as the whole healthcare system tries to catch up with the patients whose management was deferred or delayed during lockdowns.

Within the UK there was a backlog of 370,000 CT and MRI scans as of September 2020. Yet the current radiology workforce stands at just two thirds of adequate capacity, with a 33% shortfall of radiology consultants, forecast to grow to 44% by 2025. [11] The RCR's 2020 census warned that over half (58%) of radiology leaders say they do not have enough radiologists to keep patients safe. As a result, the existing pool of radiologists is being stretched beyond its capacity.

"OVER HALF (58%) OF RADIOLOGY LEADERS SAY THEY DO NOT HAVE ENOUGH RADIOLOGISTS TO KEEP PATIENTS SAFE."

There is limited mental and physical capacity to deal with these challenges. This not only affects staff wellbeing, it is a potential risk to the quality of patient care. It is proven that overwork, stress and burnout lead to an increase in medical errors, psychological comorbidities amongst staff and reduced work performance [1] and in the short and medium term healthcare faces a significant challenge to address overwork, with the most recent House of Commons Health and Social Care Committee report highlighting 'emergency' levels of burnout within the NHS. [13]

Doctors suffering from burnout were twice as likely as their peers to have been involved in patient safety incidents, to show low levels of professionalism and to have been rated poorly by patients for the quality of care provided, according to the BMJ study, which included the views and experience of 239,246 doctors in countries including the US, UK and others in Africa, Asia and elsewhere globally [31].



The problem of fatigue & burnout

Occupational burnout is not a new issue, with workers across all industries adjusting to higher workplace demands, longer working hours, reduced sleeping hours and disturbed circadian rhythms; whilst being expected to maintain their professional competence and work-life balance.[3]

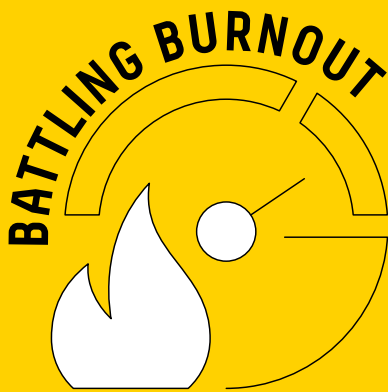
What is burnout?

Burnout is the mental, physical and emotional consequence of a worker attempting to attend to workplace demands which lie beyond their total capacity. Professor Michael West of the King's Fund describes burnout for clinicians as feelings of[14]:

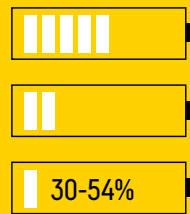
- emotional exhaustion
- depersonalisation or detachment
- lack of personal accomplishment - that they are not really making a difference
- moral distress - where the individual concerned believes that "I am not providing the quality of care that I should be providing for the people I am offering services for."

Within Radiology in particular, stress, fatigue and burnout are exacerbated by long, out of hours and overnight shifts that are proven to damage wellbeing and morale, and even to increase the risk of medical errors.[20]

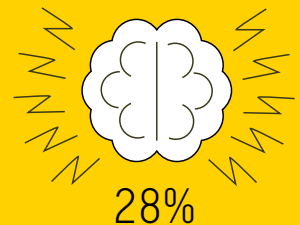
While burnout is a significant risk for clinicians across the NHS, Radiologists are especially susceptible to fatigue and stress through overwork, due to the acute shortage of NHS consultants – with a workforce gap of one third and growing. As imaging technologies advance, the volumes of diagnostic scanning increase, and non-reporting activity such as MDTs increase, so too does workplace demand on a finite pool of consultant radiologists, leading to excessive and abnormal working hours and disruption of sleep patterns. Yet Radiologists are required to have prolonged concentration, carry out comprehensive image review with varied image loads, report quickly and accurately and attend other clinical duties, all of which contribute to fatigue which can have widespread impact on wellbeing and performance.[4]



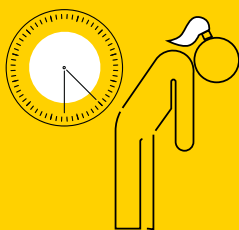
Risk of burnout is at it's **worst among doctors** since 2018



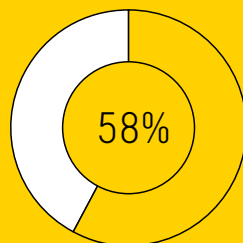
Incidents of burnout range from 30-54% of the medical profession



28%
28% of doctors say they are **sleep deprived**



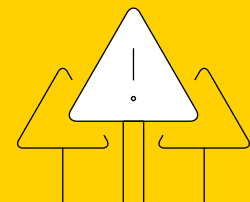
Two-thirds of medical trainees say they 'always' or 'often' feel worn out at the end of their working day



58% of radiology leaders say they **do not have enough radiologists to keep patients safe**



Doctors suffering burnout are up to 4 times more likely to have regrets about their career choice



Doctors with burnout were twice as likely to be **involved in a patient safety incident** than their peers

What is fatigue?

- Visual fatigue manifests as eyestrain and reduced ability to focus, which increases throughout the day.[5][6][7]
- Physical fatigue manifests as poor posture and musculoskeletal pain.[8][9]
- Mental fatigue correlates with both increased reading time per image and an increase of errors of omission and decreased accuracy. [10]
- Emotional fatigue leads eventually to decreased motivation, detachment and reduced compassion.[16][18]

A tired medical profession

The RCR 'Care is not just for the patient' support and wellbeing report April 2021 highlighted a wide range of factors that influence radiologist burnout. It acknowledges that burnout in staff leads to adverse outcomes such as a confrontational work environment as well as various negative implications for patients [2].

Causes of burnout identified include staff shortages, shifting clinical responsibilities, high and increasing rates of bullying, out of hours and on call commitments and a struggling NHS infrastructure. In addition, the RCR warns that radiologists are reporting increasing technical challenges, unpredictable work hours and a lack of autonomy and feedback [11].

Incidence of burnout ranges from 30-54% across the UK medical profession in recent analysis [21]. This is likely to be higher within radiology departments, which are collectively operating with a shortage of 1,939 radiology consultants, or a third of the workforce 'needed to keep up with the demand for scans and IR work'.

This trend toward burnout is already evident in the NHS Staff Survey, with staff reporting feeling unwell due to work related stress at a rate of 36.8% in 2016, rising to 40.3% in 2019 and 44% during the pandemic.[15]

Inconsistent shift patterns have been shown to make radiologists especially vulnerable to 'decision fatigue', as image volumes increase steadily year by year. Reading accuracy is shown to fall over time for radiologists as decision fatigue exacerbates mental strain, which can force radiologists to rely on heuristics as they tire.[22]

Overnight shift work alone is shown to significantly impact on diagnostic accuracy, including a documented increase in interpretation errors.[19]

Five practical Steps to Reduce Burnout

1

Ambient light and its contrast with the image being read plays a significant part in the generation of fatigue in radiologists. Increasing ambient light improves radiologist alertness. However in practice, similar levels of ambient and screen luminance both increases fatigue and harms clinician ability to detect low contrast objects, again affecting accuracy.[26]

2

Ambient lighting therefore should be increased as much as possible whilst keeping a sufficient gap in luminance. Digital screens cannot be avoided, so monitors should be reviewed for screen flicker and adjusted to avoid eye strain.[28]

3

Long shifts eventually impact on the eye's ability to focus, with induced myopia or asthenopia caused by prolonged close viewing of images.[30] Suggestions include taking regular breaks and directing vision away from the screen to allow the eyes to focus further away.

4

A review of trainees participating in European Working Time Directive-compliant training rotations within a UK deanery found that the on-call duty adversely influences sleep quality. Perhaps surprisingly the study found that it took a full five days for recovery of sleep duration, efficiency and quality.[29]

5

Prioritising sleep hygiene and recovery should be made a priority, something that is not possible in a domestic-only model with the night-time demands of emergency work.

Preserving Quality of Care & Service Provision

A 2020 report by NHS England outlines the reform required within diagnostic services with 'significant increase in the diagnostic workforce' a key finding, including a suggestion for 2000 further radiologists.[16]

However, this is a medium-term response, forecast over the next 5 years, while currently nearly 5 million people are awaiting treatment in England. Prompt action is required to ease the NHS backlog and minimise the impact of the development and deterioration of serious medical conditions.

The BMJ notes that "additional resources and greater capacity will not be enough. Profound changes to the way we work will also be required, along with reform to create a leaner, more cost effective, and more flexible NHS".[18]

Reducing the incidence of burnout will be key to supporting staff wellbeing, protecting individual colleagues and departmental accuracy and efficiency, and protecting patient outcomes.

Effective use of teleradiology

A review of fatigue in medical imaging concluded that "it is imperative that reduction of medical errors always remain the highest priority for service providers and ...[they] intervene when occupational fatigue adversely affects clinical outcomes." [24]

Teleradiology is well embedded in the NHS, and in the emergency out of hours space can be used to manage overall workload on their staff and protect a department's radiologists from overnight shifts.

However, when teleradiology providers are actively recruiting NHS radiologists to work late night and overnight shifts on top of their NHS roles, they risks further eroding wellbeing within NHS Radiology, if those consultants are returning to their substantive roles overtired and carrying the stress and strain of night-time working. There is also a risk of increased reporting error here, with research showing that overnight working decreased reading accuracy rates, particularly during the last hours of the shift compared to daytime reporting.[25]

Everlight Radiology's alternative 'Follow the Sun' model ensures the radiologists reporting urgent after hours 'overnight' scans are doing so during their normal waking hours, from a different time zone. Not only does this reduce the likelihood of errors through fatigue, it also helps safeguard the wellbeing of NHS radiologists, by ensuring they use their free time to relax, sleep and recharge, rather than working through the night from home as a teleradiologist.

Looking to the future

The current traditional model of working for radiologists is not sustainable now or in the future. Discussions surrounding meeting increasing demand in the UK revolve around boosted recruitment alongside new training pathways for radiographers and further development of skill mix. These initiatives come with their own benefits and drawbacks but still leave the immediate issue of burnout unaddressed.

Overwhelmingly radiologists wish to stay within the NHS, but there is an increasing trend towards developing portfolio careers including teleradiology. All teleradiology models are not the same however. Encouraging Radiologists to work overnight not only introduces the risk of diagnostic error for the images that evening but also contributes to Radiologists' overall fatigue, an issue that has a knock on effect when they return to the NHS.

Everlight Radiology's ability to provide 24/7 care for UK patients is facilitated by a global distribution of Radiologists in all time zones, enabling all of its Radiologists to work only during their 'normal' waking hours. This model not only protects core service delivery but also protects Radiologists from excessive fatigue and potential burnout, while also mitigating peaks and troughs in demand and capacity.

Recent events have seen mindsets alter and positive attitudes towards teleradiology accelerate, with benefits being felt on both a personal and organisational level. Teleradiology is becoming accepted as a normal part of a portfolio career and increasingly as a viable career choice in its' own right.

Dr Dan Rose, Medical Director at Everlight Radiology, states that while Radiologists may not explicitly report they are 'burnt out', many engaging with teleradiology speak of wanting to regain autonomy, control over their own work and seek a work-life balance that is manageable in the long term.

Without this focus on teleradiologists working within normal waking hours, issues of overwork and sleep disturbance will remain. It is absolutely not the radiologists' capability, work ethic or sense of duty that is lacking, but rather a suitable work environment within which they can flourish. Reducing the industry's reliance on overnight shifts, whether in house or within teleradiology, will help to minimise the incidence of burnout in radiology, safeguarding both clinician wellbeing and the quality of patient care. Everlight are already there.

Can teleradiology ease the burden of burnout?

Teleradiology is well established as an important source of support for radiology departments, providing outsourced reporting of emergency and routine studies, both during 'normal' hours and across traditional on-call periods. Critically, by doing so, teleradiology also supports and protects the wellbeing of NHS staff.

With adequate teleradiology support, radiologists within departments can focus on where they and their skills are most productive. They know they will have undisturbed rest overnight. Service managers know they will not need to manage compensatory time off following overnight work. Ideally, the department can work hand in hand with teleradiology to ensure no patient needs to wait for their imaging to be reported, or at the very least ensure there is a release valve for routine work.

Follow the sun vs overnight working

Most UK teleradiology providers recruit Radiologists from the NHS on a part- or full-time basis, and deploy them within the UK, typically from home, to cover the all-important overnight after-hours urgent shift.

By contrast, Everlight Radiology advocates and practices a 'Follow the Sun' teleradiology model whereby NHS experienced consultant Radiologists are recruited from or relocated to different time zones, enabling them to report the urgent after hours or 'overnight' shifts during their daytime.

Because Everlight's overseas-based Radiologists are working only their normal waking hours, when refreshed and rested, this reduces the potential for diagnostic errors through fatigue. It also provides a superior work-life balance, improved wellbeing and career longevity for the teleradiologists in question.

"BECAUSE EVERLIGHT'S OVERSEAS-BASED RADIOLOGISTS ARE WORKING ONLY THEIR NORMAL WAKING HOURS, WHEN REFRESHED AND RESTED, THIS REDUCES THE POTENTIAL FOR DIAGNOSTIC ERRORS THROUGH FATIGUE."

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