

# PSYCHIATRIC TRAINEES' COMMITTEE



## **Supported and Valued? Staying Safe**

a trainee led review into  
fatigue within psychiatry

**#StayingSafe**

**#SupportedValued**

# Contents

Foreword .....	3
Background .....	4
Introduction .....	5
Findings .....	6
Who was involved? .....	6
Why are psychiatric trainees different? .....	7
Are current arrangements and facilities adequate? .....	9
Is it really a problem? .....	10
Fighting Fatigue – A Case Study .....	11
Protecting Trainees: Recommendations for organisations .....	12
Surviving the night shift: Recommendations for trainees .....	14
Conclusion .....	16
Acknowledgements .....	17
References .....	18

**“You’re not healthy unless your sleep is healthy”**

Professor William Dement, Stanford University,  
one of the founders of modern sleep medicine

# Foreword

Life as a psychiatrist is a privilege. Being able to draw on medical, scientific and interpersonal skills to work with people of all ages and from all walks of life enables us to provide care and treatment that changes lives. There are new and interesting challenges every day and every psychiatrist practices with unwavering commitment, coming to work to do the very best job they can. However, current pressures on the front line require psychiatrists' to work under some of the most strenuous high-intensity and time-pressured working environments that we have ever seen and this is not without risks for both our patients and ourselves.

It is okay to not be okay. Remember, we cannot look after others without first looking after ourselves. We must come to realise that the 'hero attitude' of prioritising the needs of others over and above ourselves, while well intentioned, is misguided. While we recognise the pressure on NHS providers, the impact of increasing demand at the same time as we face chronic underfunding and a workforce crisis leaves our profession at greater risk of fatigue, burnout and medical error, than ever before. We cannot expect psychiatrists to continually 'fill the gaps' and expend their personal reserve – ultimately they will leave the profession altogether. The NHS depends on its staff and this is not sustainable. We must support and value one another and work together to improve morale, training and working conditions.

The Royal College of Psychiatrists welcome this review by the Psychiatric Trainees' Committee and are pleased to join the many organisations that are raising concerns about the impact of fatigue on doctors' health, wellbeing and performance. We are committed to improving the working lives of all psychiatrists, especially our trainees who are just beginning their careers. However, this can only be achieved with the cooperation of local employers and we would encourage all to implement the recommendations in this report in order help instigate and drive local improvements to ensure that as psychiatrists we:

- are able to rest after shifts if necessary and travel safely to, from and within work.
- work within policies which encourage rest and provide safe lone working arrangements.
- work rotas which minimise commuting time.
- have adequate rest facilities that are accessible where and when needed



Dr Kate Lovett, Dean, RCPsych



Dr Wendy Burn, President, RCPsych

# Background

Fatigue can be defined as the decline in mental and/or physical performance that results from prolonged exertion, lack of quality sleep or disruption of the internal body clock<sup>1</sup>. While there are many factors that influence an individual's level of fatigue, this review focuses on those that impact psychiatric trainees' working out of hours.

Fatigue within psychiatry is a particular area of concern. A worrying number of doctors in training (around 20-25%) continue to raise concerns about shortness of sleep while at work on a daily or weekly basis<sup>2</sup>.

Working at night involves fighting against our circadian rhythm. It disrupts the sleep-wake cycle which is designed to prepare our bodies for sleep and requires us to function effectively when our bodies are naturally programmed to be at their least active. When good quality sleep is not achieved, people do not recover properly, and they become fatigued<sup>3-10</sup>.

Even relatively mild sleep deprivation and fatigue can have profound effects on our empathy<sup>11</sup>, performance<sup>12-17</sup> and insight into our own functioning<sup>18</sup>. Medical error becomes more likely<sup>19-27</sup> and has been found to increase over successive night shifts from 17% on the first night to 36% on the fourth<sup>28</sup>.

Fatigue is also thought to be the cause of up to one in five accidents on major roads in the UK<sup>29-30</sup> with night shift workers at 20-25% increased risk of both near-crash events<sup>31</sup> and road traffic collisions<sup>32-38</sup>.

Fighting fatigue is both an individual and organisational responsibility. As doctors, psychiatrists have a duty to recognise and work within the limits of their competence<sup>39</sup>. As employees, they also have a duty to take reasonable care of their own health and safety and that of other people who may be affected by their activities at work<sup>40</sup>. Organisations also have a duty to ensure 'reasonably practicable' measures are in place to remove or control health and safety risks from work activities<sup>40</sup> and to take positive steps regarding the risk of fatigue<sup>41</sup>. More specifically, for doctors-in-training, under their Terms and Conditions of Service 2016, organisations must provide an appropriate rest facility where the doctor can sleep if a doctor advises them they feel unable to travel home following a night shift or a long, late shift due to tiredness, and where this is not possible, must make sure that alternative arrangements are in place for the doctor's safe travel home<sup>42</sup>.

# Introduction

Staying Safe – a trainee led review into fatigue within psychiatry has been led by the Royal College of Psychiatrists Psychiatric Trainees’ Committee.

It was initiated to explore concerns raised within Supported and Valued<sup>43</sup>, our national review on morale and training within psychiatry, and from the wider medical profession about the associated risks of fatigue amongst doctors-in-training on both personal and patient safety.

While we stand firmly with our colleagues and wholeheartedly support the call for improved working conditions across the NHS, there are unique considerations requiring particular consideration to safeguard the wellbeing of psychiatric trainees.

Whether working residential or non-residential shifts or on-call as an integral part of their rota, psychiatric trainees frequently cover multiple sites dispersed across substantial distances out of hours. It is important to note that even in the absence of an actual call, being on-call is negatively related to sleep quality and quantity<sup>44-54</sup> and that psychiatric trainees commonly work in isolation and engage in mentally-demanding, complex and lengthy tasks, which all increase the risk of fatigue<sup>55</sup>. They also often face long commutes home due to training regions covering large geographical areas, this constrains the ability to use public transport and increases the risk of road traffic collisions <sup>29,56</sup>.

To assess these concerns, we conducted a national survey of psychiatric trainees across all four nations of the UK between February and March 2018. This enabled an assessment of the various working patterns, conditions and current measures taken by local Trusts and Health Boards to mitigate against the risk of fatigue.

This review discusses our findings. It raises awareness of the dangers of fatigue within psychiatry and provides practical evidence-based guidance alongside specific recommendations of how both individual and organisational approaches can reduce the impact of fatigue within psychiatry.

Box 1: Common psychiatric rotas
Residential Shift: In a residential shift, psychiatric trainees must be on site and work for a defined period less than 24 hours
Non-Residential Shift: In a non-residential shift, psychiatric trainees can work from home or the hospital for a defined period less than 24 hours
Non-Resident On-Call: In an ‘on call’ rota, psychiatric trainees work a normal day and then remain on duty for 24 hours or more.

# Findings

## Who was involved?

756 trainees' participated in our survey (approximately 25% of all psychiatric trainees) from nearly 90 different organisations across all four nations of the UK.



## Why are psychiatric trainees different?

The extent to which trainees are required to drive out of hours during their shift is almost unique within psychiatry with over 80% of trainees covering multiple sites on-call.

On average, 35% of trainees reported driving under half an hour per shift, 25% reported driving between 30–60 minutes and 20% between 60–90 minutes. However, significantly, 20% of trainees reported that they drive for over 90 minutes on average per shift.

It was clear that trainees are feeling the pressure:



With increasing demand and higher standards of care expected we are pushed to the edge of what we can handle. Fielding calls while driving, under pressure to arrive as soon as possible, expected to be on top of our game... it's exhausting... I'm worrying about the patient rather than concentrating on the road.



As expected, there were discrepancies between residential and non-residential rotas and between core and higher trainees as higher trainees are often called to conduct Mental Health Act assessments across a large geographical area.

Figures 1-4: Average on-call driving times of psychiatric trainees per shift.

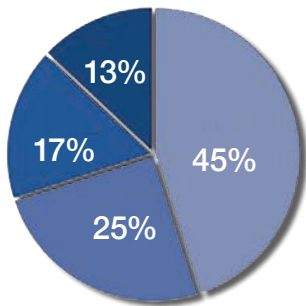


Figure 1:  
Core trainees  
(n=419)

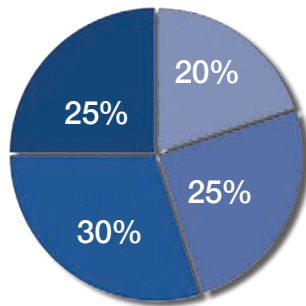


Figure 2:  
Higher trainees  
(n=311)

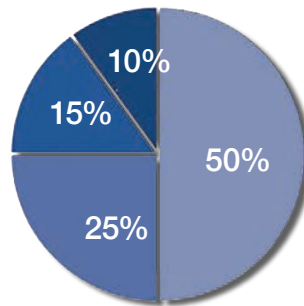


Figure 3:  
Residential rota  
(n=310)

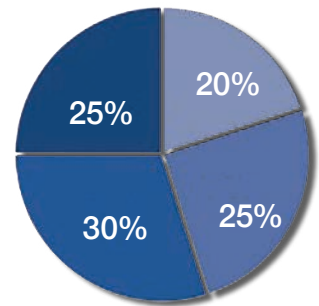
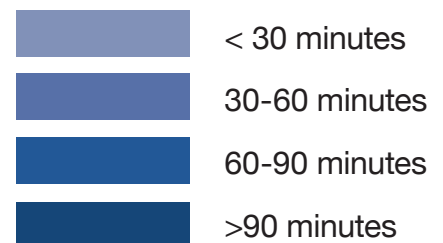


Figure 4:  
Non-residential rota  
(n=408)





While every organisation has unique considerations as to what type of rota they employ, it's worth not only thinking about driving time while their trainees at work but also how they will get home.

Unlike many multidisciplinary colleagues, psychiatric trainees face longer training times and rarely work for just one organisation. Instead, they are frequently asked to rotate across vast geographical training regions and are left with the choice of relocating and uprooting our personal lives or being forced to face long rush hour commutes home.

On average, only 40% of trainees drove under 30 minutes to return home from their shift. The majority (45%) drove 30-60 minutes and the remaining 15% drove over an hour.

This report highlights that organisational cultures are not fully understanding the impact of fatigue and are rarely supporting adequate rest facilities, encouraging sleep while on breaks or offering a choice of on-call rota to trainees.

It was clear that trainees felt unsafe:

“

On calls are really exhausting. You can hardly keep your eyes open by the end of some shifts. I've spent hours in my car, in a car park, reclined in my seat, the engine running, trying to sleep and I still dread driving home, it's just not safe.. but what can I do? I feel it's part of the culture not to complain. It's part of the job and part of the training to work and drive while tired.

”



## Are current arrangements and facilities adequate?

The most effective way to counter sleepiness is to drink, for example, two cups of caffeinated coffee and to take a short nap (up to 15 minutes)<sup>57-58</sup>.

“

I worry about my safety. The rest facilities are isolated, there's no-one else in the building, it's not visible from the wards and it's across a dark and deserted car park. I have had a number of urgent callouts where I've felt the need to run but I feel really quite frightened.

”

Less than 10% of trainees reported a local policy for managing fatigue which included the provision of rest facilities or alternative arrangements to get home when too tired to safely drive.

Furthermore, there is growing recognition that trainees want to accept their own responsibility for maintaining their well-being. However, while over 75% of trainees felt that it would be beneficial to be provided with teaching on how to optimise their sleep and cope with night working, only 3% of trainees were provided with this.

Trainees did not want luxuries, they just want the basic arrangements and facilities to feel safe.

Yet only 35% of trainees reported that there were rest facilities where they needed it and over 50% of higher trainees reported that they had no rest facilities at all. Similarly, while the recommendation is for all trainees to be able to make hot food and drink 24/7<sup>59</sup> nearly 25% of trainees could not make a hot drink and over 50% could not make hot food.

“

We're not that precious. Just the basics would be nice. The ability to make hot food, a hot drink, to feel safe, to have lone working policies where there are agreements with local organisations so that we can park safely or be escorted without being afraid of the dangers of walking alone at night.

”

## Is it really a problem?

According to the evidence, working over eight hours carries a cumulative risk of fatigue<sup>60-66</sup> with a 25-50% higher risk of an accident at twelve hours compared to at eight hours<sup>15,28,61,67</sup>. Fatigue also lessens one's ability to accurately judge their own performance and therefore whether working clinically or driving, individuals may not even realise they are making mistakes<sup>68</sup>.

Nearly 10% of psychiatric trainees in our survey reported a road traffic collision and over 40% reported a 'near miss', with 60% of both accidents and near misses occurring on the way home.

A staggering number of trainees reported low speed incidents such as reversing into parked cars, knocking wing mirrors, and scraping against barriers, walls, curbs and bollards as a result of fatigue affecting their concentration. Several even reported falling asleep at the wheel, swerving or entering the wrong lane, driving through red lights and getting lost in familiar places because they were so tired.

I would never drive under the influence of alcohol but I'm expected to drive without sufficient sleep. The effect is the same – my reaction times are slower and I have concerns about my own and others' safety. This is a very important issue not just for trainees' safety but for the publics.

I've been really close to having a serious accident. One night I got lost in an area I normally know really well, I accidentally ran a red light and bumped into the curb. I had to stop and take a break before carrying on and doing the assessment.

Trainees also highlighted the increased risk faced by all drivers late at night and in the early hours of the morning. They reported having to swerve away from dangerous drivers, drive on unconditioned roads in adverse weather conditions and drive in often isolated areas without passers-by for help if needed.

Many trainees also reported feeling 'lucky' to have escaped without further injury and the psychological impact and fear resulting from these incidents was alarming.

It is recommended within Rule 91 of the Highway Code that journeys between midnight and 6am should be avoided as natural alertness is at a minimum. In our personal lives everyone avoids driving at these times when possible and worries about loved ones when they do. Yet for psychiatric trainees, despite the clear dangers of driving late at night and the early hours of the morning, this is routinely expected.

I've had several near misses and been so tired that I don't feel safe to drive, I've been genuinely scared I might crash.

## Fighting Fatigue – A Case Study

Leeds and York Partnership NHS Foundation Trust (LYPFT) are one of the first organisations to sign up to the BMA's Fatigue and Facilities charter in full; a commitment which has been spearheaded by their Junior Doctor Forum.

Established in 2016, LYPFT's Junior Doctor Forum meets quarterly, is chaired by the Guardian of Safe Working and reports to the organisation's Quality Committee and Medical Director.

The forum is supported by the Associate Medical Director for Doctors in Training and has representatives from human resources, medical education (who co-design rotas with trainees), the medical directorate, the local negotiating committee, British Medical Association and of course, trainees.

While listening to trainees and acting on their concerns and viewpoints has been a well-established practice within LYPFT, in keeping with the ethos of Enhanced Junior Doctor Forums, as recommended by Supported and Valued<sup>43</sup>, LYPFT's forum extends beyond contractual requirements and has formalised this process.

It has allowed them to engage with and harness the energy and vision of trainees to develop and improve not only working conditions and training but also clinical services, with trainees being at the heart of these improvements.

Most recently, LYPFT have started to strengthen the good work they have already undertaken in relation to safe working conditions for trainees by tackling fatigue within psychiatry and thus promoting patient safety.

LYPFT's existing suite of rooms, while not available for every trainee on-call, are felt to be suitable, accessible across multiple sites and importantly, safe to use, being within the main hospital sites. They have bathrooms, a kitchenette, lounge area and IT access and are available for higher trainees to use on 24 hour on-call rotas during their protected five-hour break should they choose to do so.

LYPFT should be highly commended for their commitment to improving the working lives of their trainees and helping ensure that trainees are able to both work and rest safely. They have made it clear that if trainees do not feel safe driving home that they do not have to and that on-call rooms are available for use until they do.

It's reassuring to know that if you've finished a shift and you can't keep your eyes open, that there are facilities where you can get an hour or twos sleep. It's simple but it really makes a difference.

Dr Tom Lane, Psychiatric Trainee

The incorporation of the BMA Fatigue and Facilities Charter within the Trust will no doubt further improve our commitment to safe working conditions for trainees and ultimately deliver safer patient care. It is essential that our current and potential future workforce are supported and valued.

Dr Abs Chakrabarti,  
Associate Medical Director for  
Doctors in Training

# Protecting Trainees: Recommendations for organisations.

While appreciating the current strain on organisations due to the national shortage of psychiatrists and rota gaps across services, it is vital that local education providers and training bodies work collaboratively to maintain the health, wellbeing and safety of trainees, especially overnight.

Patients are always better served by clinicians who can make safe and effective decisions because they are well-rested and there is no doubt that improving on this area will improve morale, recruitment and retention within psychiatry<sup>10,28,61,69</sup>.

These recommendations should be considered alongside the BMA's Fatigue and Facilities Charter<sup>70</sup> and Good Rostering Guide<sup>71</sup>. It is important to remember that local nuances should be considered, and that by law, employers must consult with employees on health and safety matters<sup>40</sup>.

This should be proactively achieved through engagement with enhanced junior doctor forums<sup>43</sup> and a nominated employer representative for fatigue and facilities<sup>70</sup>. They should be responsible for creating and implementing bespoke solutions, and where substandard conditions are identified, an action plan should be agreed with the Local Negotiating Committee and implemented within six months<sup>70</sup>.



## Local Fatigue Policies:

Developed to help manage fatigue and keep trainees safe at night, they should actively encourage rest breaks, naps and safe lone working arrangements<sup>59,72-73</sup>.



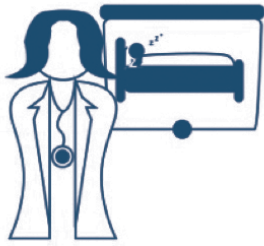
## Ergonomic Rota Design:

Good rostering, with a choice of forward rotating 'fatigue friendly' rotas which avoid abrupt transitions between day and night, provide adequate recovery time between shifts (with enough flexibility for leave) and minimise commuting time home should be provided<sup>40,71,74</sup>.



## Accommodation and/or Transport:

Free accommodation and/or alternative arrangements to transport trainees who feel too tired to drive home should be established and available, including for those who are voluntarily resident on-call<sup>42</sup>.



### Fatigue Education:

Local fatigue policies, self-help strategies and out of hours working arrangements should be included at induction<sup>70</sup>.



### Remote Working:

Work practices should be reviewed so that trainees are not pressurised or encouraged to drive without proper rest (e.g. encouraging the use of taxis, electronic records & prescribing, telephone confirmations etc.)<sup>33</sup>.



### Occupational Medicine:

Trainees should have comprehensive access to accredited occupational medicine specialists and be encouraged to attend<sup>40,70</sup>.



### Rest Facilities:

Minimum standards should be met for appropriate on-site rest facilities that are available 24/7, with the required IT, where trainees can at least recline in surroundings that are quiet, dark and comfortable<sup>70,75-76</sup>.



### Food and Drink:

Healthy and hot (or the facilities to heat) food and drink should be available 24/7<sup>48</sup>.



### Culture:

Encourage a culture where concerns can be raised, rest breaks are encouraged and support is available so that trainees don't feel pressured to continue working while fatigued<sup>65</sup>.

# Surviving the night shift: Recommendations for trainees.

It is important not to overlook the responsibility and benefits of maintaining your health, wellbeing and safety, especially while on nights.

You can't look after others without first looking after yourself.

Remember, shift workers tend to sleep for an hour longer if asleep by 10 am rather than midday<sup>78</sup> and that 'Sleep Debt' is accrued cumulatively when more than one hour of sleep is missed for every two hours awake and that it can only be repaid by catching up on lost sleep<sup>48,69,79</sup>.

While it can often be challenging, establish a routine that suits you and helps you safely survive the night shift. There is some advice below, but surviving the night shift is a very individual process, take time to understand what works for you.



## Optimise your sleep environment:

Let others know you're sleeping & make sure it's cool, quiet, dark and comfortable to sleep.



## Utilise light:

Expose yourself to bright light after waking and on shift, but when you get home avoid main lighting and keep it dark.



## Maintain good sleep hygiene:

Avoid the temptation to arrange other activities during the day, reserve your bedroom for sleep and avoid spending long periods of time awake in bed.





### Establish a routine:

Lie in until midday and then take a nap before your shift, get to sleep as soon as possible after each shift and on your final shift take a short morning nap before re-establishing your normal routine.



### Stay well hydrated and use caffeine carefully:

On shift, a small dose of caffeine just before you nap can be helpful, kicking in just as you wake to help overcome transient sleep inertia.



### Eat wisely:

Have a full meal before your shift, have 'lunch' halfway through, and enjoy a light meal 30-60mins before trying to sleep when you get home.



### Take your breaks:

Ask for non-emergency calls to be held and avoid deep sleep with 20-45 minute naps before you get really tired



### Don't drive tired:

Don't force yourself, it's really not worth the risk and despite the inconvenience, consider the alternatives instead.



### Seek support:

Escalate concerns appropriately and consult an occupational medicine specialist for problems with fatigue or sleep.



# Conclusion

Working out of hours will always be associated with risks to both staff and patients. Yet our current practice, attitude and culture exacerbates these risks which in other safety critical industries would be considered unprofessional at best and at worst, illegal<sup>80</sup>.

Trainees lives are being risked on a daily basis. Driving while over-tired is effectively no different to driving while over the legal limit for blood alcohol concentration<sup>81-84</sup>. We must provide the conditions for trainees to rest appropriately while working out of hours and support them to manage their own wellbeing.

It is time that it is recognised that working at night is not the same as working in the day. At both a personal and organisational level, the natural physiological effects of working at night must be understood and planned for. It is vital that we do not underestimate the potential risk for serious fatigue related errors and accidents on the road and in the clinical environment.

This report presents the current impact of fatigue within psychiatry across the UK and provides evidence-based recommendations that will support organisations and psychiatric trainees in staying safe. It complements existing employment and health and safety legislation, the British Medical Association's Fatigue and Facilities charter<sup>70</sup>, and other related guidance<sup>10,69,71,85</sup> which provides more detailed advice.

Trainees must be supported and valued, and they must be kept safe. This is a collective responsibility. It is crucial that a collaborative approach, at a local level, is embraced to provide a comprehensive strategy to managing fatigue within psychiatry.

While we've focussed on out of hours working it's important to remember that a broad range of factors can affect fatigue including the 'heroic' and infallible image of perfection among healthcare professionals<sup>85-86</sup> and lack of psychological safety within healthcare culture.

We would like to emphasise that it is only by supporting and valuing one another and prioritising the wellbeing of staff that we can continue to provide compassionate healthcare that meets the challenges of modern healthcare within our NHS.

We strongly urge organisations to follow the recommendations outlined within this report to help improve the wellbeing, safety, morale and working conditions within psychiatry which if not overcome, will contribute to poorer quality care, burnout and further increase the workforce challenges we face.

# Acknowledgements

The Psychiatric Trainees' Committee would like to acknowledge McClelland and colleagues (2017), the Association of Anaesthetists of Great Britain & Ireland, the British Medical Association and Dr Michael Farquhar for leading the fight against fatigue within our profession.

We would also like to thank Dr Tom Lane, Dr Abs Chakrabarti and Leeds and York Partnership NHS Foundation Trust for providing their case study, all trainees who took part in our survey as part of this review, the wonderful support staff at the Royal College of Psychiatrists and our College Officers for their unwavering support.

# References

1. Kroemer KEH and Grandjean E *Fitting the task to the human: A textbook of Occupational Ergonomics* (Fifth edition) Taylor and Francis 1997
2. General Medical Council. Training environments 2017: Key findings from the national training surveys. GMC, 2017
3. Monk TH and Folkard S *Making shiftwork tolerable* Taylor and Francis 1992
4. Smith CS, Folkard S, Fuller JA 'Shiftwork and Working Hours' in *Handbook of Occupational Health Psychology* 2003 163-183 Washington DC: American Psychological Association
5. Sallinen M, Kecklund G. Shift work, sleep, and sleepiness – differences between shift schedules and systems. *Scand J Work Environ Health* 2010;36:121-33.
6. Wright KP Jr, Bogan RK, Wyatt JK. Shift work and the assessment and management of shift work disorder (SWD). *Sleep Med Rev* 2013;17:41-54.
7. Patterson PD, Buysse DJ, Weaver MD, et al. Recovery between work shifts among Emergency Medical Services clinicians. *Prehosp Emerg Care*. 2015a;19(3):365-75
8. Patterson PD, Weaver MD, Hostler D. EMS provider wellness. In: Cone D, Brice JH, Delbridge T, Myers B, editors. *Emergency medical services: clinical practice and systems oversight*. Vol. 2. Chichester, West Sussex (UK); Hoboken (NJ): Wiley; 2015b. p. 211-6
9. Patterson PD, Martin-Gill C. Absence and Need for Fatigue Risk Management in Emergency Medical Services. *Prehospital Emergency Care*. 2017 Nov 16:1-3.
10. Farquhar M. Fifteen-minute consultation: problems in the healthy paediatrician – managing the effects of shift work on your health. *Arch Dis Child Educ Pract Ed* 2017; 102: 127-132.
11. Guadagni V, Burles F, Ferrara M, et al. The effects of sleep deprivation on emotional empathy. *Journal of Sleep Research* 2014; 23: 657-63
12. Krueger GP 'Sustained work, fatigue, sleep loss and performance: A review of the issues' *Work and Stress* 1989 3 (2) 129-141
13. Harrison Y and Horne JM 'The impact of sleep deprivation on decision making: A review' *Journal of Experimental Psychology: Applied* 2000 6 (3) 236-249
14. Van der Linden D, Frese M, Meijman TF. Mental fatigue and the control of cognitive processes: effects on perseveration and planning. *Acta Psychologica* 2003; 113: 45-65.
15. Wagstaff AS, Sigstad Lie JA. Shift and night work and long working hours—a systematic review of safety implications. *Scand J Work Environ Health* 2011;37:173-85.
16. Mansukhani MP, Kolla BP, Surani S, et al. Sleep deprivation in resident physicians, work hour limitations, and related outcomes: a systematic review of the literature. *Postgrad Med* 2012;124:241-9.
17. de Cordova PB, Bradford MA, Stone PW. Increased errors and decreased performance at night: A systematic review of the evidence concerning shift work and quality. *Work* 2016;53:825-34.
18. Capanna M, Hou R, Garner M, et al. Risk-taking in junior doctors working night shifts in intensive care. *Intensive Care Medicine* 2017; 43: 709-10.
19. Lockley SW, Cronin JW, Evans EE, et al. Effect of reducing interns' weekly work hours on sleep and attentional failures. *N Engl J Med* 2004; 351:1829-37.
20. Landrigan CP, Rothschild JM, Cronin JW, et al. Effect of reducing interns' work hours on serious medical errors among interns in intensive care units. *N Engl J Med* 2004;351:1838-48.
21. Friedman RC, Bigger JT, Kornfeld DS. The intern and sleep loss. *N Eng J Med* 1971;285:201-3.
22. Gander PH, Merry A, Millar MM, et al. Hours of work and fatigue related error: a survey of New Zealand Anaesthetists. *Anaesthesia and Intensive Care* 2000; 28: 178-83.
23. Gander P, Purnell H, Garden A et al (2007) Work patterns and fatigue-related risk among junior doctors. *Occupational & Environmental Medicine* 64(11): 733-38.
24. Grantcharov TP, Bardram L, Funch-Jensen P, et al. Laparoscopic performance after one night on-call in a surgical department: prospective study. *BMJ* 2001;323:1222-3.
25. Eastridge BJ, Hamilton EC, O'Keefe GE, et al. Effect of sleep deprivation on the performance of simulated laparoscopic surgical skill. *Am J Surg* 2003;186:169-74.
26. National Patient Safety Agency (NPSA) *Seven Steps to Patient Safety*. National Patient Safety Agency, 2004.
27. Barger LK, Ayas NT, Cade BE et al., Impact of extended-duration shifts on medical errors, adverse events, and attentional failures. *PLOS Medicine* 2006; 3(12): e487.
28. Folkard S, Lombardi DA and Tucker P 'Shiftwork: Safety, sleepiness and sleep' *Industrial Health* 2005 43, 20-23
29. Horne J A and Reyner L A 'Vehicle accidents related to sleep: A review' *Occupational and Environmental Medicine* 1999 56 (5) 289-294
30. Department for Transport/Office for National Statistics *Road Casualties Great Britain: 2004* The Stationery Office 2004 ISBN 0 11 522703 6
31. Lee M, Howard M, Horrey W, et al. High risk of near-crash driving events following night-shift work. *Proc Natl Acad Sci USA* 2016;113:176-81.
32. Royal Society for the Prevention of Accidents. *Driver Fatigue And Road Accidents. A Literature Review And Position Paper* 2001
33. Royal Society for the Prevention of Accidents *Driving for Work: Safer Journey Planning* 2017.
34. Barger LK, Cade BE, Ayas NT, et al. Harvard Work Hours, Health, and Safety Group. Extended work shifts and the risk of motor vehicle crashes among interns. *N Engl J Med* 2005;352:125-34
35. Åkerstedt T, Peters B, Anund A, et al. Impaired alertness and performance driving home from the night shift: a driving simulator study. *J Sleep Res* 2005;14:17-20.
36. Stutts JC, Wilkins JW, Osberg JS, et al. Driver risk factors for sleep related crashes. *Accid Anal Prev* 2003;35:321-31.
37. Steele MT, Ma OJ, Watson WA, et al. The occupational risk of motor vehicle collisions for emergency medicine residents. *Acad Emerg Med* 1999;6:1050-53.
38. Kirkcaldy BD, Trimpop R & Cooper CL (1997) Working hours, job stress, work satisfaction, and accident rates among medical practitioners and allied personnel. *International Journal of Stress Management* 4(2): 79-87.
39. General Medical Council. *Good Medical Practice*. GMC, 2013
40. Health and Safety Executive. *Managing shiftwork: health and safety guidance*. HSE Books, 2006
41. Health and Safety Executive. *A guide to the Health and Safety (Consultation with Employees) Regulations 1996*. Guidance on Regulations L95. HSE Books, 1996
42. NHS Employers. *Terms and Conditions of Service for NHS Doctors and Dentists in Training (England) 2016 – Version 3*. NHS Employers, 2017

43. Royal College of Psychiatrists. Supported and Valued? A trainee led review into morale and training within psychiatry. RCPsych, 2017
44. Pilcher JJ and Coplen MK. Work/rest cycles in railroad operations: effects of shorter than 24-h shift work schedules and on-call schedules on sleep. *Ergonomics*, 2000, 43: 573–588.
45. Torsvall L, Castenfors KA Kerstedt T et al. Sleep at sea: a diary study of the effects of unattended machinery space watch duty. *Ergonomics*, 1987, 30: 1335–1340.
46. Torsvall L. and Akerstedt T. Disturbed sleep while being on-call: an EEG study of ships' engineers. *Sleep*, 1988, 11: 35–38.
47. Geurts SAE and Sonnentag S. Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. *Scand. J. Work Environ. Health*, 2006, 32: 482–492.
48. Åkerstedt T, Nilsson PM and Kecklund G. Sleep and recovery. In: S Sonnetag, P L Perrew and DC Ganster (Eds) *Research in Occupational Stress and Wellbeing: Current Perspectives on Job-Stress Recovery*. Emerald Group Publishing Limited, Bingley, 2009: 205–247.
49. Wuyts J, De Valck E, Vandekerckhove M. et al. Effects of presleep simulated on-call instructions on subsequent sleep. *Biol. Psychol.*, 2012, 91: 383–388.
50. Bamberg E, Dettmers J, Funck H, et al. Effects of on-call work on well-being: results of a daily survey. *Appl. Psychol. Health Well Being*, 2012, 4: 299–320.
51. Van de Ven HA, Bultmann U, de Looze MP et al. Need for recovery among male technical distal on-call workers. *Ergonomics*, 2015, 58: 1927–1938.
52. Dettmers J, Vahle-Hinz T, Bamberg E, et al. Extended work availability and its relation with start-of-day mood and cortisol. *J. Occup. Health Psychol.*, 2016, 21: 105–118.
53. Ziebertz CM, van Hooff M LM, Beckers DGJ, et al. The relationship of oncall work with fatigue, work-home interference, and perceived performance difficulties. *Biomed Res. Int.*, 2015
54. Ziebertz CM, Beckers DG, Van Hooff ML, et al.. The effect on sleep of being on-call: an experimental field study. *Journal of sleep research*, 2017, 26(6), pp.809-815.
55. Hockey R. *The psychology of fatigue. Work, effort and control*. New York: Cambridge University Press, 2013
56. Philip P, Taillard MA, Quera-Salva B, et al. Simple reaction time, duration of driving and sleep deprivation in young versus old automobile drivers. *J Sleep Res* 1999;8:9–14.
57. Department for Infrastructure. *The official highway code for Northern Ireland*. Department for Infrastructure, 2015.
58. Department for Transport. *The Highway Code*. Department for Transport, 2015
59. NHS Improvement. *Eight high impact actions to improve the working environment for junior doctors*. NHS Improvement, NHS Providers, Faculty of Medical Leadership and Management, 2017
60. Morrow G, Burford B, Carter M et al (2012) *The impact of the working time regulations on medical education and training: literature review. A report for the General Medical Council*. Durham: Centre for Medical Education Research, Durham University.
61. Folkard S and Tucker P 'Shift work, safety and productivity' *Occupational Medicine* 2003 53 (2) 95-101.
62. Nachreiner F, Akkermann S & Haenecke K (2000) Fatal accident risk as a function of hours into work. In: Hornberger S, Knauth P, Costa G et al (eds) *Shift work in the 21st Century*. Frankfurt: Peter Lang.
63. Kodz J, Davis S, Lain D et al (2003) *Working long hours: a review of the evidence*. Volume 1 — main report. London: Department of Trade and Industry.
64. White J & Beswick J (2003) *Working long hours*. Sheffield: Health & Safety Laboratory.
65. Van der Hulst M, Van Veldhoven M & Beckers D (2006) Over-time and need for recovery in relation to job demands and job control. *Journal of Occupational Health* 48(1): 11-9.
66. Caruso CC (2006) Possible broad impacts of long work hours. *Industrial Health* 44(4): 531-6.
67. Folkard S and Lombardi DA. Toward a 'risk index' to assess work schedules. *Chronobiology International* 2004; 21(6): 1063-72
68. Van Dongen HP, Maislin G, Mullington JM et al. The cumulative cost of additional wakefulness: dose-response effects on neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation. *Sleep* 2003;26:117–26.
69. Horrocks N and Pounder R. *Working the night shift: preparation, survival and recovery – A guide for junior doctors*. Royal College of Physicians of London 2006
70. British Medical Association. *British Medical Association. BMA Fatigue and Facilities charter*. British Medical Association, 2018.
71. British Medical Association and NHS Employers. *Good Rostering Guide*. British Medical Association and NHS Employers, 2018
72. Dinges DF, Broughton RJ (eds). *Sleep and alertness: Chronobiological, behavioural, and medical aspects of napping*. New York: Raven Press, 1981:1–322.
73. Dinges DF, Orne MT Whitehouse WG, et al. Temporal placement of a nap for alertness: contribution of circadian phase and prior wakefulness. *Sleep* 1987;10:313–29.
74. Driscoll TR, Grunstein RR, Rogers NL. A systematic review of the neurobehavioural and physiological effects of shiftwork systems. *Sleep Med Rev* 2007;11:179-94.
75. Scottish Executive. *NHS Circular: HDL. 50 – Living and working conditions for hospital doctors in training*. Human Resources Directorate, Health Department, Scottish Executive, 2001
76. Cole RJ. Postural baroreflex stimuli may affect EEG arousal and sleep in humans. *J Appl Physiol* 1989;67:2369–75.
77. The Association of Anaesthetists of Great Britain & Ireland (AAGBI). *Fatigue Resources: standards for rest facilities*, 2017. Available at: <https://www.aagbi.org/professionals/welfare/fight-fatigue>
78. Folkard S. Circadian rhythms and shiftwork: adjustment or masking? In: Hekkens WThJM, Kierhof GA, Rietveld WJ (eds), *Trends in chronobiology*. Oxford: Pergamon Press, 1988.
79. Rook JW and Zijlstra FRH. The contribution of various types of activities to recovery. *Eur. J.Work Organ. Psychol.*, 2006, 15: 218–240.
80. Greig P & Snow R. Fatigue and risk: are train drivers safer than doctors? *BMJ* 2017; 359:j5107
81. Dawson D and Reid K. Fatigue and alcohol performance impairment. *Nature* 1997;388:235.
82. Lamond N, Dawson D. Quantifying the performance impairment associated with fatigue. *J Sleep Res* 1999;8:255–62.
83. Williamson AM, Feyer A-M. Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. *Occup Environ Med* 2000; 57:649–55.
84. Arnedt JT, Owens J, Crouch M, et al. Neurobehavioral performance of residents after heavy night call vs after alcohol ingestion. *JAMA* 2005;294:1025–33.
85. British Medical Association. *Fatigue and sleep deprivation – the impact of different working patterns on doctors*. British Medical Association, 2018.
86. Farquhar M. For nature cannot be fooled. Why we need to talk about fatigue. *Anaesthesia* 2017, 72, 1055–1068

Please cite as: Till A, Walker T, Kansagra A, Bailey A, Blewett C, Milward K (2018)  
*Supported and Valued? Staying Safe – a trainee led review into fatigue within psychiatry.*  
Psychiatric Trainees' Committee, Royal College of Psychiatrists, UK

