

48-hour maximum working week (without averaging) for Junior Doctors in Scotland

**Expert Working Group -
Final report**

Professor Philip Cachia

January 2020

Executive Summary

A 48 hour maximum working week (without averaging) for Junior Doctors in Scotland cannot be safely piloted or achieved within current service models and staffing establishments.

Achieving the 48 hour working week (without averaging) objective through service redesign and increased staffing would require long term (circa 10 years) planning and would have significant resource implications.

Before embarking on long-term service changes to implement a 48 hour maximum working week (without averaging) for Junior Doctors, the impact should be fully evaluated and costed. This could be achieved through a regional pilot study which should evaluate the impact on the whole system (including other staff groups) and whether or not there are benefits for Junior Doctors in terms of reducing fatigue and improving wellbeing.

There are evidence based interventions known to reduce fatigue and the associated patient and staff safety risks that could be implemented to consistent standards across Scotland.

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1. Introduction and Background

The Scottish Government is committed to make NHS Scotland attractive for Junior Doctors to work and train in, whilst ensuring they have safe and sustainable work patterns. Junior Doctor rotas must comply with the EU Working Time Regulations and the New Deal contract for Junior Doctors (2002). Additional measures introduced by the Scottish Government to improve Junior Doctors' working lives include reducing the maximum number of consecutive working days to 7, abolishing 7 consecutive night shifts, and ensuring a minimum of 46 hours recovery time after night shifts (*Scottish Government Director's Letter (2018) 16*).

Scottish Government Health Workforce, is implementing a quality improvement (QI) framework that examines the working patterns of doctors-in-training: the Professional Compliance Analysis Tool (PCAT) (Please see conclusion 7 on page 32). PCAT evaluates the rota templates and the supporting professional environment across three interdependent domains: Patient Safety, Quality of Training and Trainee Health and Wellbeing.

Working Time Regulations limit the working week to 48 hours but permit the hours to be averaged over a 26 week period. As a result many Junior Doctor rotas in Scotland still include individual weeks with very long hours of work and the associated risks of fatigue. A further commitment from the Scottish Government is the introduction of a 48 hour maximum working week - without averaging - which would mean that no Junior Doctor in Scotland worked more than 48 hours in a seven day period.

In March 2018 the Cabinet Secretary for Health and Sport commissioned an independent Expert Working Group (EWG) to explore the options and changes that would be required to achieve this objective. A chair for the EWG (Philip Cachia) was appointed in March 2018. The Chair worked with Scottish Government advisors to agree on a membership of the EWG that both ensured representation of all relevant stakeholders, and proposed appropriate terms of reference for the group.

An informal workshop was held in September 2018 at which the agreed stakeholders were invited to present key issues, benefits and barriers to achieving the 48 hour objective.

The stakeholders who contributed to this workshop were:

- The Academy of Royal Medical Colleges and Faculties of Scotland (consultant and junior representatives)
- BMA Scotland (two representatives)
- NHS Scotland Management Executive Group (two representatives)
- NHS Education for Scotland (two representatives)
- Health Board Directors of Medical Education (one representative)

Building on the workshop outcomes, the membership was finalised to include the above stakeholder organisations and a public partner, recruited through the Healthcare Improvement Scotland Public Partner programme.

Terms of Reference for the EWG were developed and signed off by the Cabinet Secretary in January 2019 (Appendix 1).

Formal EWG meetings were held in November 2018, March, May, June, September and November 2019 to take forward an agreed programme of work which makes up the substance of this report. External presentations provided information and evidence on the use of e-rostering and the Professional Analysis Compliance Tool (PCAT) as examples of best practice in rota design in NHS Scotland.

All stakeholders agreed to support the EWG programme of work while noting the following:

1. The EWG programme should initially explore options for best practice rota design to achieve the 48 hour maximum working week (without averaging) objective within existing service and educational models, and with the current Junior Doctor staffing establishments.
2. If rota design alone did not enable the objective to be met, it was agreed that more radical options (service redesign and/or substantial change in the educational model) would be required to deliver 48 hour maximum working week (without averaging). It was, however, recognised that consensus between different stakeholder groups would be difficult to achieve. Furthermore, any solution would be likely to have significant resource implications and was outwith the remit of the group.
3. The relationships between rota design and hours of work for Junior Doctors are intimately linked to other key issues, including the substantial evidence base on the impact of fatigue on patient and staff safety, staff wellbeing and quality of life. There are established UK- and Scotland- wide initiatives that will report on these broader areas. The work of the EWG should be focused on the 48 hour maximum working week (without averaging), taking cognisance of implications for fatigue and wellbeing, while avoiding replicating the work of other initiatives in this area.

4. In making recommendations, the EWG would consider and prioritise the whole system consequences of Junior Doctor rota changes, including the impact on other NHS staff groups, service continuity and patient safety.

It was therefore agreed that the EWG programme of work would consist of the following stages:

1. Design 48 hour rotas with no averaging for a variety of Junior Doctor grades and specialties using current best practice and Doctors Rostering System (DRS) computer software
2. Consider the educational implications of the rota changes through the EWG NES representatives (as per current practice in the NHS where proposed rota changes require educational approval from the relevant Postgraduate Dean before implementation)
3. Undertake a site visit to explore in depth the potential impact of 48 hour rotas on: i) Service Impact; ii) Staff and Patient Safety; iii) Employee experience and iv) Educational Quality. Evidence would be gathered from a variety of staff groups through facilitated focus groups
4. Pilot potentially viable 48 hour rotas in the workplace with the agreement of local NHS management teams. (The EWG did not proceed with this after analysis of evidence from stages 1-3 and our review of the evidence of the impact of fatigue on staff and patient safety)

NHS Lanarkshire kindly agreed that University Hospital Hairmyres would be the pilot site for this work through their Management Executive representative on the EWG.

2. Membership of the Junior Doctors 48 hour Expert Working Group

Professor Philip Cachia, Chair

Professor Derek Bell, Scottish Academy of Medical Royal Colleges (Deputy Dr Michael Jones)

Dr Luke Yates, Scottish Academy of Medical Royal Colleges

Mr Sean Gallimore, BMA

Dr Lewis Hughes, BMA

Dr Simon Edgar, Chair, Scottish Directors of Medical Education Group

Mr Daniel McQueen, Healthcare Improvement Scotland, Public Partner

Dr Jane Burns, Management Steering Group (Deputy Dr John Keaney)

Dr Annie Ingram, Management Steering Group

Professor Clare McKenzie, NHS Education for Scotland

Ms Anne Dickson, NHS Education for Scotland

Scottish Government/NHS Education for Scotland Clinical Leadership Fellows

Dr Alex Rice

Dr Chris Sheridan

Dr Katie Ritchie (From August 2019)

Dr Michelle Currie (From August 2019)

Scottish Government Advisors

Dr John Colvin, Professional Adviser and Senior Medical Officer

Mr Daniel MacDonald, Medical Workforce Adviser

3. EWG programme of work

3.1 Design 48 Hour working week rotas with no averaging

Summary of current Junior Doctor rotas in Scotland:

There are over 800 different Junior Doctor rotas in operation across NHS Scotland, covering all grades and specialties, and in settings ranging from large urban teaching/trauma centres to rural and community healthcare.

The current approval process involves:

- Design and endorsement by territorial board Human Resources departments as meeting all applicable employment safeguards, with input from service and medical staff
- Approval for use by Junior Doctor representatives
- Educational approval by NHS Education for Scotland (NES) through the accountable Postgraduate Dean for each programme. (Detailed in section 3.2)
- Approval from the Programme Director of the New Deal Monitoring team, situated within the Scottish Government Health Workforce, Leadership & Service Reform Directorate.

Currently template rotas are prepared in Health Boards on the Doctors Rostering System (DRS), which is a computer-based system that calculates hours worked and ensure rotas meet safeguards set out within legal and contractual rules. The system also ensures compliance with the Working Time Regulations which stipulate a 48-hour maximum working week, averaged over a 26-week period.

Pilot rotas for 48 hour maximum working week:

NHS Lanarkshire agreed for University Hospital Hairmyres to be the pilot site for 48 hour maximum (without averaging) rota design and for the subsequent site visit. While no single site could be representative, nor the results predictive of every specialty rota across Scotland, Hairmyres was an ideal test site, combining busy 24/7 acute care service provision across different specialties with a significant training and education commitment. The pre-existing rotas met all local and national educational requirements, and were compliant with the Working Time Regulations, the 2002 New Deal Contract for Junior Doctors, and the Scottish Government Directive (*Ending of 7 nights, Max 7 shifts in a row, & minimum 46 hours rest following nightshifts*).

Pilot 48 hour maximum working week (without averaging) rotas were developed based on current staffing from February 2019 for 6 months to reflect as accurate a picture as possible. Rotas were selected for 3 specialties to give a broad spread and across all training levels in order fully to assess the impact.

Those included are:

- General Medicine Foundation Year 1 (FY1)
- General Medicine Junior (Foundation Year 2 (FY2), General Practice Specialty Trainees (GPST), Core Medical Trainees (CMT1-2)
- General Medicine Senior: Medical Specialty Trainees (ST3-7)
- General Surgery Foundation Year 1
- General Surgery Junior (FY2, GPST, CT1-2)
- General Surgery Senior (ST3-8)
- Emergency Medicine Junior (FY2, GPST, Acute Care Common Stem Trainees (ACCS))
- Emergency Medicine Senior (ST4-6)

Please see Appendices 2 and 3 for the current and proposed pilot rotas.

The 48 hour maximum working week (without averaging) rotas were produced using the Doctors Rostering System (DRS) as above. Some presumptions were made in the formulation of these rotas, these include:

- No change to staffing numbers
- All on call commitments should remain the same across both rotas (i.e. out of hours work – likely required to continue to provide a safe service)
- No change to other staffing within the departments (of other doctors, nurses or allied health care professionals)
- Where possible no change to the shift timings (to continue to facilitate handover)
- Loss of normal working days equate to loss of training time

The new rotas also meet all other current working hours requirements as referenced above.

Rotas were produced by Scottish Clinical Leadership Fellows working within the Scottish Government Health Workforce department. In order to allow more in-depth assessment of the impact of the proposed change, the group agreed to focus analysis within one site so as to allow more accuracy in modelling. Rotas were produced to maximise the protection of service delivery and training time by retaining as much working time as possible within the confines of all mandatory hours limits and 48 hour (without averaging) limit. The analysis should be

regarded as a “*best case*” scenario. Were, for example, staffing to reduce (which is common with natural fluctuations), or a department have specific additional clinical needs when rostering staff, the resulting changes required is likely to reduce overall hours, training time and possible daytime service cover further, which could have a direct impact on front line patient care.

There are important educational implications of rostering Junior Doctors to work in ‘normal working hours’ (weekdays 8am to 6pm) and ‘out of hours’ (weekends, and from 6pm through to 8am). During ‘normal working hours’ the full range of hospital support services are operational and most planned, elective clinical care and essential clinical and managerial meetings take place. In addition, most of the formal educational activities take place during normal working hours. All these activities and experiences are essential to fulfil the bulk of the GMC approved curricular requirements that enable Junior Doctors to progress and successfully complete their training programmes within the ‘indicative training time’ approved by the GMC for each specialty. Out of hours experience is also an essential component of training for specified areas of emergency care in each specialty curriculum.

However, many essential curriculum educational outcomes cannot be delivered out of hours, even if there were to be increased consultant time and educational supervision, because elective and planned care does not take place then. The balance of rostered time in ‘normal working time’ (predominately) and ‘out of hours’ is therefore essential to deliver specialty curricula within the required indicative training time.

The 48 hour maximum (without averaging) rotas developed for Hairmyres University Hospital with the underpinning analyses and comparisons with pre-existing rotas are detailed in appendices 2 and 3.

Limitations of Analysis:

1. Rotas were redrafted extensively as part of this exercise and have been maximised to the limit of what is possible to protect training days and maintain working hours within current contractual safety limits and employment laws – despite this, all rotas experienced a significant reduction in total hours and training time, as well as a deterioration in work-life balance and employee experience measures
2. As per guidance from the 48 hour EWG, the tabletop exercise has devised rotas which do not exceed 48 hours in any Monday – Sunday 7 day period
 - Therefore it is possible that >48 hours could be worked if considering **any** consecutive 7 day period, e.g. Week 1: Friday,

Saturday & Sunday shifts 0800-2100, Week 2: Mon-Thursday shifts 0900-2100 *would total 87 hours in a 7 day period* (but each Monday-Sunday 7 day period would not exceed 48 hours)

- Early modelling based on a 48-hour maximum in **any** 7-day period strongly suggests it would be even more difficult to achieve without further adversely impacting on training time, ability to take leave, changes from days to night, weekends worked and all other proxy measures analysed. In all rotas assessed under this parameter, trainees would work on average <40 hours a week which would result in them being classed as in less than full time training with the consequence that training would not be completed within the approved indicative training times (see option 3, page 30)
3. Producing rotas that achieve the 48-hour maximum working week (without averaging) objective and all existing requirements around contractual safeguards and training has been very labour intensive. It would represent a significant workload to roll this out across the 800+ rotas currently in operation in Scotland. It is also likely to be more challenging within larger services and other specialities working on more complex sites than those analysed to date
 4. The scope of the analysis undertaken only covers the impact on Junior Doctors, and does not include Staff and Associate Specialist Doctors or other professionals such as Advanced Nurse Practitioners and Physician Associates who also work within services and on the same rotas at times, who would have their own requirements and contractual rules to take account of, and could be affected by any change to junior doctor rostering as an unintended consequence

Conclusions:

From this exercise, there are a number of generic conclusions that can be applied to 48 hour maximum (without averaging) working week rotas utilising existing service and education models and current Junior Doctor staffing establishments. These are likely to be applicable to all specialties providing 24/7 acute care services across the spectrum of geographies in Scotland:

- Moving from current rotas to 48 hour maximum (without averaging) rotas can only be achieved with an increase in the percentage of Junior Doctor working time spent out of normal working hours
- One unintended consequence of this will be greater fragmentation of Junior Doctors' working time, with potentially detrimental impacts on their experience of daytime, team-based routine and elective care

- The reduction in normal daytime working will result in a loss of training time for Junior Doctors (see Appendices 2 and 3 for predicted losses in individual rotas). This may be partly compensated for by increasing the formal educational opportunities delivered 'out of hours', but this will require additional consultant time and extended on-site presence, with protected educational supervisor time. Furthermore, there will be many essential requirements of specialty curricula (e.g. elective surgery, planned ward rounds, multi-disciplinary meetings and out-patient clinics) which can only be delivered during normal working hours
- There will be adverse service impacts of reduced Junior Doctor availability during normal working hours, with the likelihood of reduced service activity unless additional staff can be recruited
- There is a significant risk in some specialties that the GMC required curricular outcomes will not be delivered within the approved indicative training time for each specialty due to the loss of normal working time. This would result in a complex issue of having to extend indicative training time to Certificate of Completion of Training either for individual Junior Doctors or systemically for all trainees in specific specialties (see analysis in Appendix 2 and discussion in section 6.2)

Alex Rice and Chris Sheridan

3.2 Educational Implications of proposed 48 hour rotas

In considering rota changes, in addition to taking account of compliance with legal requirements and service delivery, it is also essential that the rota ensures that the doctor in training has the opportunity to achieve the educational outcomes of their training programmes. Scottish Government HDLs identify that there is need for an educational approval process, however, are not prescriptive about how this is achieved. Within NHS Scotland, NES, as the GMC approved Deanery, approves rotas from an educational perspective. Assessment of educational approval for the EWG was led by the representatives from NES.

Current Processes

To date, there has been no standardised way that rotas are checked across NHS Scotland nor was there consistency in how approval was sought from the Deanery. Each of the four Postgraduate Deans approached the request for educational approval in a different way although there was commonality in the need for detailed educational information. Information gathering will vary according the curricular requirements, detail of the provision of formal teaching on site and other factors specific to the specialty location and service. It is important to recognise that educational approval is for doctors in formal training programmes and that many rotas contain non-training grade doctors for which the Deanery has no role in approving their rota contribution.

Proposed Processes

Participation in the desktop exercise as part of the Expert Working Group has identified the benefit to trainees, service leads and educational leads of a clearly articulated process for educational approval of rotas.

Building on previous work within the North region of the Scotland Deanery, a Rota Checklist and flow chart has been developed by Scotland Deanery in consultation with Scottish BMA JDC (Appendix 4). This clearly sets out the need to provide evidence that the curriculum can be achieved, that formal teaching is built into the rota as well as promoting patient and trainee safety by ensuring necessary handover time and shift patterns as set out by Scottish Government. The Rota Checklist will also promote compliance with the GMC standards as described in '*Promoting Excellence: Standards for medical education and training*' (GMC, 2015).

By defining the requirements, the Rota checklist ensures that all the necessary information is provided, in addition to the computerised trainee rota. This will allow the Scotland Deanery to make an informed educational approval decision.

To ensure that there has been thorough consultation, there is a requirement for trainee representation involvement, educational lead and service lead approval as well as the rota administrator.

The checklist will also support the implementation of recommendations for safer and more robust rotas which reflect the reality of staffing rather than a notional full rota in *Caring for Doctors, Caring for Patients* (GMC 2019).

The Scotland Deanery will retain the submitted information and approval (or not) decision. This will allow access by deanery teams, DMEs or trainees who request the information. This resource could be valuable to quality management of training programmes allowing a process of checking the working rota against the approved rota at the time of deanery quality management visits.

It is important to ensure consistency of process and fairness for trainees across the different training environments. This Rota Checklist will be implemented by the Scotland Deanery for all rota changes from Jan 2020. The deanery will review the process and the quality of information submitted one year after implementation to consider whether modifications are required.

Educational Approval of 48 hour maximum working week (without averaging) pilot rotas for Hairmyres University Hospital

As part of the desktop exercise, the Postgraduate Deans within NES reviewed the template 48hour rotas for the EWG.

Educational approval is primarily based on the ability for doctors in training to be able to access training opportunities described in their respective curricula which includes both on the job training and formal teaching. Added to that is the need for supervision appropriate to the trainee level. Consideration is also given to the other aspects of rota design in considering appropriate learning. For doctors in training, rota structure (shift lengths and breaks) as well as the frequency of unsocial work should be considered (which impacts on work-life balance, family and relationships). Both of these are important and can influence the attractiveness of posts.

In their current iteration, none of the 48 hour maximum (without averaging) working week rotas developed for Hairmyres University Hospital would be given educational approval (Appendix 5). The proposed rotas seem to offer less frequent team working and less frequent continuity of care than current rotas. These are both are known to adversely impact patient safety and care.

Clare McKenzie and Anne Dickson

3.3. Site visit to Hairmyres University Hospital to explore the impact of proposed 48 hour rotas

Having modelled potential 48 hour maximum (without averaging) rotas for different specialties at Hairmyres University Hospital, the EWG conducted a visit to the site to meet with different staff groups. The purpose of the visit was to obtain qualitative data and staff feedback on the global impact of introducing these rotas.

The visit team was led by the EWG Public Partner (Daniel McQueen) and included Scottish Government/NES Clinical Leadership fellows (all junior doctors with in depth understanding of rota design software) and volunteer quality assurance managers from NES.

NHS Lanarkshire staff were recruited by local management and consisted of four different groups: Junior Doctors; Medical Consultants; Nursing and Allied Healthcare Professions staff and medical managers. All participating staff were sent the pilot 48 hour maximum working week (without averaging) rotas in advance of the visit.

Daniel McQueen (on behalf of the EWG) and Dr John Keaney, Medical Director, Acute Division, NHS Lanarkshire hosted the event.

Qualitative data and feedback was obtained through 4 separate focus groups. Each group was facilitated by an EWG member/clinical leadership fellow and a NES QA manager to encourage open discussion and feedback within each staff group who would be affected were these 48 hour maximum rotas to be introduced. The discussion was structured to ask each staff group in confidence about the potential impact of the rotas on: Service Impact; Staff and Patient Safety; Employee Experience and Educational quality.

Feedback from the four focus groups is detailed in appendices 6 and 7. There was strong concordance from all the focus groups in spite of the different staff groups represented. There are some consistent, high level conclusions that can be drawn from the exercise:

1. Service impact
 - a. Reduced availability of Junior Doctors during 'normal working hours' would have a negative impact on service provision and waiting time targets. (Loss of 3 or 4 Junior Doctors during 'normal daytime working' in most departments)
 - b. Out-patient clinic numbers may have to be restricted as Junior Doctor presence cannot be guaranteed

- c. Concerns about the continuity of patient care because of increased fragmentation of Junior Doctors' working week and increased cross-cover
 - d. Loss of consultant time due to daytime cover for Junior Doctors
 - e. Potential increase in locum costs
2. Staff and patient safety
- a. Patient safety concerns because of frequent handovers, fragmented working pattern for Junior Doctors and cross-cover of multiple wards 'out of hours'
 - b. Increased number of 'day to night' shifts necessary to achieve the 48 hours associated with increased risks of both fatigue and medical errors
 - c. Further erosion of multi-disciplinary team culture on wards (due to loss of 'normal working hours' time for Junior Doctors)
3. Employee experience
- a. Potential impact on attractiveness for recruitment purpose
 - b. Adverse impact on work/life balance for Junior Doctors because of inflexibility of new rotas
 - c. Increased number of weekends and split weekends at work will adversely affect work/life balance for Junior Doctors
 - d. Difficulty in arranging study leave and annual leave for Junior Doctors because of inflexibility of rotas
 - e. Potential benefits to Junior Doctors of splitting long days into half days (although adds to problems of continuity of care for patients)
 - f. Impact on consultant job plans
4. Educational Quality
- a. Significant loss of education in every rota
 - b. Increased numbers of zero days would result in loss of formal educational activities (although the days off work were perceived as a benefit by some Junior Doctors)
 - c. Risk that specialty curricula cannot be delivered within GMC approved indicative training time because of loss of 'normal daytime working'

Alex Rice, Chris Sheridan and Daniel McQueen

3.4. Evidence on Fatigue and relationship to hours of work and rota design

Whilst the EWG programme of work was focussed on the changes required to implement a 48 hour maximum working week (without averaging) for Junior Doctors, there was agreement that recommendations for change could not be effective or safe without considering the impact proposed changes may have on fatigue.

In the absence of robust evidence of the impact of the rota changes necessary to achieve a 48 hour maximum working week (without averaging) Lewis Hughes and Luke Yates undertook a literature search and critical review of the available evidence on behalf of the EWG:

Fatigue: What it is and why Junior Doctors are at greater risk

Definitions of fatigue vary in the literature, and the terms tiredness and drowsiness are used interchangeably in a number of publications^[1]. We offer two widely accepted definitions:

“A state of feeling tired, weary, or sleepy that results from prolonged mental and physical work, extended periods of anxiety, exposure to harsh environment, or loss of sleep.”^[1]

“Fatigue is the decline in mental and/or physical performance that results from prolonged exertion, lack of quality sleep or disruption of the internal body clock. The degree to which a worker is prone to fatigue is also related to workload. For example, work that requires constant attention, is machine paced, complex or monotonous will increase the risk of fatigue.”^[2]

Doctors (and other clinical staff) are at an increased risk of fatigue because they routinely, and increasingly, work long hours and variable shift patterns, and are exposed to excessive and high-intensity workloads. In the GMC National Training Survey 2019 (response rate 95% of all UK Doctors in Training) about one in four reported feeling ‘burnt out’ by their work with 56% reporting that they always or often feel ‘worn out’ at the end of the day. 45% of trainees report working beyond their rostered hours on a daily or weekly basis; 39% rated their workload as heavy or very heavy^[3]. Fatigue and shift working are recognised risk factors for wellbeing and clinical errors. Employers have a legal duty to consider the risks to safety presented by shift work^[4].

How fatigue and its contributors impact on Doctor-Patient safety

Fatigue and Working Hours

Longer working hours are associated with greater risk of fatigue^[5]. We are not aware of any evidence that directly addresses the relative risks to a doctor's safety working above or below a threshold of 48 hours in a given seven-day (168-hour) period. Acute fatigue (resulting from extended time on a single shift or time awake without rest) impairs attention, performance and working memory capacity^[6]. While it is difficult to accurately determine how the level of risk changes over the period of time worked, there is some consensus from studies of shift workers that longer shifts (defined as shifts at least 10 or 12 hours long in the literature)^[7] are associated with a 25-30% higher risk of accidents and injuries than an eight-hour shift^[8-10]. Research specifically in physicians demonstrates an increased risk of road traffic accidents after extended shifts over 24 hours^[11], and a higher risk of needlestick injury during extended shifts over 20 hours^[12]. An individual who experiences moderate sleep deprivation (equivalent to being awake for 17-19 hours) can have the same reaction time as being at a blood alcohol level of 50mg/100ml (the legal limit for safe driving in many countries including Scotland).^[13] In addition, evidence from across shift-working industries shows that working long shifts in succession (eg blocks of seven nights) increases the risk of fatigue and errors, with the risk increasing the more shifts worked consecutively.^[8,14]

Junior Doctors in Scotland are currently required to not exceed 48 hours per week averaged over a 26 week reference period. The 48 hour figure takes account of annual and study leave. This requirement relates to the European Working Time Directive and is separate to the contractual limits provided in the New Deal. There is some evidence that the reduction of hours worked to this average is likely to have contributed to improved patient safety, with 33% fewer medical errors in one (relatively small) study.^[15] This study assessed the intervention of a 48 hour average working week alongside a number of other evidence-based interventions to improve safety and reduce fatigue, suggesting that reducing working hours alone does not provide the solution. Although the study did not explore this issue, trainees reported a reduction in Educational Opportunities.^[5] Studies from the US appear to indicate improved safety with reduced working hours, but this was in the context of reducing working hours from 85 to 65 per week.^[16-18] Interventions which reduce the working hours of Doctors in Training have not been shown to adversely affect patient mortality, cost of care or the rate of readmission to hospital.^[19] Overall the available evidence is limited by variable definitions of "long hours" and differing methods of assessing fatigue levels. The optimal duration of a working week for doctors is unknown.

Personal Health Effects of Fatigue

Over the long term, working long hours, shift work and night work adversely affect the health of workers^[20,21]. Specific effects include increased risk of cardiovascular disease^[22,23], primary sleep disorders^[24], becoming overweight or obese^[25], and developing type 2 diabetes^[26–28]. Other studies which have included hospital workers have found an increased risk to shift-working women of miscarriage and pre-term birth.^[29] Fatigue is a risk factor for burnout^[6], and working long hours may increase the risk of depression and anxiety. Female night-shift workers appear to be at an increased risk of breast cancer^[30,31], and night shift work is linked to an elevated risk for prostate^[32] and colorectal cancer^[33], as well as dementia^[34].

Other Risks for Fatigue

It should be noted that total working hours is not the only factor influencing fatigue. Shift work disrupts circadian rhythm and the natural sleep cycle^[35] especially early morning^[36] and night shift^[37] work. It is widely acknowledged that the effects of fatigue are more pronounced working night shifts compared to day shifts.^[38,39] Having short recovery times (<11 hours) between shifts, or rapidly rotating schedules (eg frequent transitions between day and night), also adversely impacts on sleep duration^[40]. “Forward-rotating” rota designs are recommended^[6,41]. Rota design and shift duration affect inpatient continuity of care^[42], necessitating more frequent information transfers between clinicians (introducing an increased risk of error) and reducing educational opportunities. Anecdotal evidence reported by members of this expert working group suggests physician continuity of care can also reduce workload and perceived stress through improving the doctor’s familiarity with a patient’s recent history.

Work conditions are also relevant to fatigue. Rest breaks taken during a shift reduce risk from fatigue^[4] but require adequate facilities including access to food and drink and the capacity for short naps overnight (<20 minutes to avoid impaired alertness of first awakening).^[41] The recent review “*Caring for Doctors, Caring for Patients*” commissioned by the GMC and undertaken by Prof. Michael West and Dame Denise Coia recommends all UK Healthcare Employers implement the BMA Fatigue and Facilities Charter and BMA Good Rostering Guidance.

Workload must also be considered. Excessive workload may prevent doctors from taking breaks and also increases the risk of interruptions. Decision fatigue is a recognised acute consequence of high-intensity work.^[6] Finally, a

junior doctor is expected to maintain administrative and education documentation as part of their training which should nominally be completed during working hours: where workload prevents this these required tasks must be completed on the doctor's unpaid/non-work time, effectively extending working hours beyond those rostered.

Conclusion

There is limited evidence that a reduction in working hours to 48 per week, averaged over a reference period, could reduce fatigue and resultant risks to safety. However, there are some measures which have a more compelling evidence base, for example: limiting higher numbers of consecutive long shifts of at least 10 hours, avoiding frequent day-night transitions (in either direction) and for the integration of short periods of sleep during night duties. There is strong evidence that supports the necessity of regular and adequate rest breaks during any period of work. There is no clear evidence base which points to an optimum number of working hours in any given time period or for an absolute limit on hours (without averaging) within the current evidence reviewed, particularly as they relate to medical practitioners.

A 48-hour maximum working week (without averaging) may reduce the risk of acute fatigue that specifically results from hours at work during the weeks that would previously have exceeded this limit. It would not address the other factors affecting fatigue addressed here and may in fact exacerbate them. Unless there was simultaneous and extensive system overhaul, its introduction would impact rota patterns, continuity of care and work intensity (due to the resultant reduction in clinicians at work at any one time). These factors would counteract the benefits from reduced hours to an unknown extent. As a result, we cannot confidently state that a 48 hour cap would achieve its primary goal of reducing fatigue and may even prove counterproductive, while also incurring adverse effects on secondary considerations such as work-life balance, training opportunities and team-working. Other evidence-based interventions could potentially achieve more pronounced and certain impact on fatigue, and thus clinician and patient safety, with fewer unintended consequences.

For references, see Appendix 8.

Lewis Hughes and Luke Yates

4. GMC Report - *'Caring for Doctors Caring for Patients: How to transform UK healthcare environments to support doctors and medical students caring for patients'* (November 2019)

In recent years, the evolving crises in medical recruitment and retention, poor job satisfaction and increasing evidence of burnout in the medical profession have been widely recognised as a cause for concern. In response, the GMC commissioned Professor Michael West and Dame Denise Coia to undertake a UK wide review to identify the causes of poor wellbeing in doctors and medical students and help provide solutions that can be actioned in the NHS.

Their report *'Caring for Doctors Caring for Patients: How to transform UK healthcare environments to support doctors and medical students to care for patients'* was published by the GMC in November 2019.

The report makes eight key recommendations focussed on delivering safe, supportive and inclusive environments and compassionate cultures. The authors challenge health service leaders to implement all recommendations in order to improve the wellbeing and sustainability of the medical workforce – an outcome known to correlate with higher quality patient care and higher levels of patient satisfaction.

The GMC report has a much wider scope than the specific focus of the EWG to make recommendations on achieving a 48 hour maximum working week (without averaging) for Junior Doctors. However, two of the key recommendations in *'Caring for Doctors Caring for Patients'* are pertinent to Junior Doctor working hours:

Key recommendation two (*Caring for Doctors Caring for Patients, November 2019*)

Work conditions

To introduce UK-wide minimum standards for basic facilities in healthcare organisations.

- *All healthcare employers should provide all doctors with places and time to rest and sleep, access to nutritious food and drink, the tools needed to do their job and should implement the BMA's Fatigue and Facilities charter.*
- *The leadership and boards of every organisation employing doctors should review facilities to ensure compliance with the BMA's Fatigue and Facilities charter.*

- *Systems regulators, improvement bodies and partners listed should check that employers have implemented the BMA's Fatigue and Facilities charter in all working environments.*
- *The GMC should continue to work with partners via the insights and data obtained through their NTS to monitor, assess and support implementation. Where issues are identified, the GMC should work with postgraduate deans, medical royal colleges and employers to ensure they are promptly and fairly addressed.*

Key recommendation three (*Caring for Doctors Caring for Patients, November 2019*)

Work schedule and rotas

To introduce UK-wide standards for the development and maintenance of work schedules and rotas based on realistic forecasting that supports safe shift swapping, enables breaks, takes account of fatigue and involves doctors with knowledge of the specialty to consider the demands that will be placed on them.

- *NHS England, NHS Wales, NHS Boards in Scotland and the Department of Health (Northern Ireland) should fully implement the BMA's and NHS Employers' Good Rostering Guide (see new deal monitoring guidance in Scotland) in all healthcare environments*
- *Healthcare organisations across the UK should develop and maintain mechanisms to enable doctors to report rotas that are not compliant with the BMA's and NHS Employers' Good Rostering Guide (see new deal monitoring guidance in Scotland). Guardians of safe working hours in England should encourage doctors in training to raise exception reports about rostering issues and should monitor such exception reports and take steps to address the issues raised*
- *Systems regulators, improvement bodies and partners listed vi should check employers have implemented the BMA's and NHS Employers' Good Rostering Guide (see new deal monitoring guidance in Scotland)*
 - *The GMC should work with partners listed above to monitor implementation of the BMA's*

The EWG programme of work had been completed when 'Caring for Doctors Caring for Patients' was published. We did, nonetheless, re-visit the EWG report section 'Evidence of Fatigue and relationship to hours of work and rota design' and compare our conclusions with the relevant recommendations in the GMC report. The outcome of this confirms great synergy between the findings and recommendations on quality of experience as work and rota design in relation to Junior Doctors fatigue and wellbeing.

'Caring for Doctors Caring for Patients' does not make specific reference to Junior Doctors' hours of work so there are no conclusions or recommendations about a desired or optimum maximum working week.

5. Public Partner Reflections

The primary role of a public partner on the EWG was to ensure the EWG adhered to the Terms of Reference and to provide objective scrutiny of the EWG processes. This section contains Danny McQueen's observations in respect of these. In addition, Danny has added some thoughtful insights and suggestions on the content discussed at EWG meetings which should inform NHS leaders in taking forward the recommendations of the EWG.

Observations from Lay Representative (HIS Public Partner) Daniel McQueen

Summary concerning procedure and outcome

1. The EWG worked in accord with its Terms of Reference.
2. The other members made me very welcome and encouraged me to contribute to the discussions.
3. I was impressed by the positive attitude and active engagement of the various parties represented on the EWG. The Chairman has been excellent in facilitating focused discussions.
4. There was thorough and detailed evidence gathering and discussion of possible benefits and risks associated with the probable changes needed to achieve a 48-hour working week, without averaging, for Junior Doctors (JDs). The desk-top rota exercise undertaken at Hairmyres Hospital involving medical, nursing and administrative staff from North Lanarkshire Health Board, and EWG and NES facilitators, was comprehensive, open-minded, and proved very helpful in reviewing the draft rotas that had been prepared to explore the feasibility of a 48-hour week, without averaging.
5. I was in agreement with the conclusion that introducing the 48-hour week without averaging using existing resources would be a serious risk to service delivery and would lengthen the time required to train JDs to Consultant level. It might reduce fatigue for JDs, but other staff (Consultants, nurses, auxiliaries and ancillary staff) would have their workload increased, with the associated stress, fatigue and reduction in the quality of their lives. JD education is under the auspices of the GMC, not devolved, and so cannot easily be altered in Scotland.
6. A planned phased increase in staffing levels might achieve the desired outcome, but it would take time and funding to train and recruit the necessary personnel, from medical students through to Consultants, Nurse Practitioners

and Physician Assistants. Different specialities, hospitals, and Boards have particular protocols designed to meet their service requirements locally, so it will be challenging to design national rotas and rosters that are equitable and flexible across the 14 territorial Health Boards in achieving the desired outcome of safe and effective healthcare and high quality postgraduate training for JDs in Scotland.

Personal comments as Public Partner, highlighting some of the evidence considered

1. Working week.

One surprise to me as a layperson is that much of the NHS hospital system generally works a five-day week, with reduced activities at weekends. Exceptions are the acute services, such as A&E, Obstetric, Acute Medicine, Lab services and Radiology, which run 24/7, and some special elective “catch-up” medical and surgical initiatives at weekends to reduce waiting lists. Given the high demand for routine elective services, perhaps the NHS could review how more of the facilities could be used on a seven-day basis in order to spread the workload and reduce pressure on JDs at weekends, perhaps by employing staff who would prefer to, or can only, work at weekends? This would need to include support staff, such as phlebotomists, porters, receptionists, cleaners and caterers, in addition to doctors and nurses. Other sectors in modern society have moved towards a seven-day working week, with all that entails for employees and operating costs. A patient-centred NHS should be managed for its customers, as well as its staff.

2. Shift duration and actual hours worked by JDs.

It surprises me that the hours JDs are working are not routinely recorded, although periodic “snap-shot” sampling is undertaken by managers. There is considerable evidence to show that productivity and safety decline after 10 hours of pressured working, so future rostering - in association with increased staffing levels – should explore 8-hour maximum shifts, to reduce fatigue and risks associated with working 10-12 hour shifts, currently required to fill rotas with existing staff. Patient safety and staff wellbeing would be enhanced by eliminating long busy shifts, particularly when there are rota gaps and it is not feasible to take breaks. Modern IT systems used in other sectors enable the actual hours worked to be logged automatically via non intrusive methods such as door entry cards, personal ID badges with a built-in microchip, or via mobile phone tracking apps. Such information would be very useful for HR and Health & Safety purposes, as well as service design in the NHS. Knowing the actual hours worked, the breaks taken, the time spent on service provision, education & training, and time off work might be controversial (Big Brother risk), but if the information was generally unintrusive to collect, used anonymously and not

linked to individuals' remuneration, it could be a progressive development that might help enhance the wellbeing and retention of JDs.

3. Fatigue and rest.

Evidence shows that it can be difficult for JDs to take statutory breaks during busy shifts, and that this leads to fatigue, stress, and sometimes to ill-health or resignation (drop-out). A reason for not taking breaks is the lack of appropriate cover, particularly when working on rotas with gaps (insufficient staff to fill the roster), the heavy workload associated with hospitals running at or near-capacity in caring for an ageing population, and the desire to serve their patients. The latter altruism is commendable, but it could result in fatigued doctors compromising patient safety, as well as endangering lives when, for example, handing over patients to the next team then driving home exhausted at the end of their shift. JDs and their managers seem prepared to ignore statutory breaks, albeit unwillingly, and staff not taking mandatory breaks seems to be an acceptable risk. This is in marked contrast to other groups in society with stressful jobs having potential risk for endangering the public, such as airline pilots, air traffic controllers, train, HGV and coach drivers. In these jobs adequate cover is provided for breaks, working hours are monitored and penalties are applied to employers and employees for breaching the rules. When cover is not available, the coach/truck/plane is delayed until the operator has taken the designated break.

4. Facilities.

Some hospitals reportedly have no provision for staff catering or rest rooms for use during night shifts, and others do not allow a nap to be taken during 12 hour shifts at night/weekend. This is not in accord with the professional guidance given to JDs working such shifts, namely to reduce fatigue by taking a 20 minute nap during the shifts and to ensure that a hot meal is taken mid-shift (e.g. see recommendations from the Royal Colleges of Physicians and Anaesthetists). It would seem appropriate in terms of risk reduction and safe working by JDs to ensure that breaks are taken, thereby reducing fatigue and risks. This could be done in parallel with reviewing the 48 hour week. Some extra costs are likely, and use of locum doctors, Nurse Practitioners, Physician Assistants and senior medical students to provide temporary cover during on-site breaks could be explored.

5. Patient safety and Information Technology (IT)

The 12 or 12.5-hour shift is recognised by JDs and other workers as regularly being linked to fatigue near the end, when crucial hand-over information concerning patients is passed on to the next shift. Patient safety is potentially compromised by reliance on verbal communication. The process would benefit from patients' notes

being available online, with IT systems automatically flagging concerns or test results that may have been overlooked or misunderstood during the end of shift verbal hand-over by tired doctors.

6. Supervision and team communication.

One stressful feature for inexperienced JDs working with reduced support as a consequence of rota gaps or weekend night shifts is the reluctance and limited ability to communicate securely with senior colleagues who are on-call at home. I was amazed to find that methods used by my grandchildren to share information by mobile phones, such as exchanging text and pictures instantly via WhatsApp, is generally disallowed or discouraged in the NHS on the grounds of General Data Protection Regulation (GDPR) and patient confidentiality. It should be possible to devise a secure encrypted equivalent to WhatsApp for the NHS for sharing information confidentially, as is already the case for emails via NHS.net .

Secure phone communication (telemedicine) between colleagues via pictures or short videos of patients, scans, or lab results would increase efficiency for JDs and their senior colleagues, whilst also improving JD's decision-making, confidence and training, thereby reducing stress, stress-related absence from work and potential career abandonment - whilst enhancing JDs' wellbeing and morale. Encrypted interchange of objective information (evidence) within and out-with hospitals is, I understand, already available for a few specialities (e.g. radiology), and extension to most specialities and hospitals would be a relatively cheap way of reducing the stress and fatigue associated with the high workload reported by JDs. On-call supervisory senior doctors would also benefit by dealing with more JDs concerns from home, reducing the tiring need come in to the hospital.

7. Conclusion.

From a lay perspective, improved team-working, communication, rostering and staffing can reasonably be expected to reduce the stress and fatigue being experienced by JDs, whilst also enhancing their education, training and wellbeing. This in turn would improve healthcare for patients in Scotland. Such an outcome is arguably achievable quite rapidly as a priority, with minimal risk and cost, while the inevitably longer-term process of achieving the 48 hours maximum working week for JDs, without averaging, develops in tandem.

Daniel McQueen

6. Conclusions and recommendations:

The EWG conclusions and recommendations will be presented in the following sections:

1. A 48 hour maximum working week (without averaging) for Junior Doctors cannot be safely achieved within current service models and staffing establishments in NHS Scotland
2. Service and staffing changes necessary for future implementation of a 48 hours maximum working week (without averaging) for Junior Doctors in NHS Scotland
3. Recommendations for improving Junior Doctor wellbeing and minimising fatigue in the workplace
4. Implementation and next steps

Section 1: A 48 hour maximum working week (without averaging) for Junior Doctors cannot be safely achieved within current service models and staffing establishments in NHS Scotland:

Following analysis of the quantitative and qualitative data collected during the EWG programme of work, all EWG stakeholders agree:

Principle conclusions:

- 1. A 48 hour maximum working week (without averaging) for Junior Doctors cannot be safely implemented within existing service and education models and staffing establishments**
- 2. It would be unsafe and potentially counterproductive to undertake a workplace based pilot study of 48 hour maximum working week (without averaging) rotas using current Junior Doctor establishments in NHS Scotland**

In reaching these unanimous conclusions, the EWG concluded that the impact on service provision, continuity of care for patients, training and education for Junior Doctors and the workload for other staff groups in the service would create unacceptable risks to patient and staff safety and disruption to the provision of healthcare.

Furthermore, the best available 48 hour maximum working week (without averaging) rotas for Junior Doctors would result in a fragmented working pattern with the potential to actually increase the risks of fatigue in the workplace, thus negating the purpose of the intervention.

Section 2: Service and staffing changes necessary for future implementation of a 48 hours maximum working week (without averaging) for Junior Doctors in NHS Scotland

Having concluded that a 48 hour maximum week (without averaging) cannot be achieved within existing service and education models and current staffing establishments, the EWG considered a number of more radical options for pursuing this policy objective. In order to deliver a successful outcome, all options need to address key issues identified in the rota modelling and Hairmyres University Hospital visit to ensure:

- Continuity of patient care and maintenance of service delivery
- Appropriate prioritisation of daytime working hours for Junior Doctor to deliver training and education curricular requirements and involvement in multidisciplinary team based care
- Adequate out of hours working to deliver curricular requirements in relation to emergency care
- Best practice rota design to minimise fatigue risk
- A whole system approach to manage the impact on other staff group

The EWG considered five options that had the potential to meet these requirements, all of which would have major implications for management and resources:

1. Significantly increasing the Junior Doctor establishment in NHS Scotland
2. Restructuring the postgraduate medical training model in Scotland from a per capita distribution of trainee doctors across Health Boards to a smaller number of training centres. The greater concentration of trainees in training centres would permit rotas to be designed that achieved the 48 hour target without detriment to service provision and training and education in these centres
3. Extending the indicative training time for postgraduate medical training programmes across Scotland so that the reduced weekly hours of work and training to achieve the 48 hour target were compensated by additional years of training to complete the curriculum requirements and achieve the Certificate of Completion of Training (CCT)
4. Reducing the reliance on Junior Doctors for 24 hour acute care provision by using other staff groups (including consultant and Staff Grade, associate specialist and specialty (SAS) career grade doctors, physician associates and advanced nurse practitioners) to staff out of hours rotas (together with a reduced commitment from Junior Doctors who must have some exposure to out of hours working to complete their curricular requirements)

5. Reducing the number of 24 hour acute care rotas provided across NHS Scotland through service redesign and amalgamation of rotas

The benefits and risks of each of these options are summarised in table 1 in Appendix 9.

Outcome:

The EWG did not consider any of these options to be desirable or to offer practical means of achieving the 48 hour target giving the current service and staffing pressures in NHS Scotland. Further in-depth analysis and a formal risk assessment would be essential pre-requisites before embarking on a strategy to implement a 48 hour maximum working week (without averaging) through any of these routes. In the absence of evidence of the effectiveness of these interventions or the potential for unintended consequences across the whole system and other staff groups, a formal pilot study and evaluation would be desirable.

Options 1, 2 and 3 all require system-wide policy decisions for implementation and could not, therefore, be piloted and evaluated on a regional or specialty basis. Options 4 and 5 might offer potential solutions in some service settings and could be piloted and evaluated on a regional or specialty basis but the challenges to be overcome should not be underestimated and the costs of implementation would be significant.

Options not suitable for regional or specialty pilot and evaluation:

Option 1: increasing the Junior Doctor establishment in NHS Scotland is not realistic given the lack of available trained doctors who could be recruited. Initial modelling suggests that an increase in trainee doctor numbers of around 30% would be necessary but unlikely to be achievable given the difficulties in recruitment to the current junior doctor establishment. Creating the necessary workforce through increased medical student numbers would require a minimum lead time of 8 years.

Option 2: changing the educational model to 4 or 5 specialist regions or centres has some attractions from the educational perspective but the service impact on regions and centres that lose training posts combined with the adverse impact on long term recruitment and retention of medical staff would more than negate the potential benefits in terms of Junior Doctor hours.

Option 3: Extending the indicative training time for individual doctors in training would have an unpredictable impact on the attractiveness of training in Scotland for Foundation doctors applying for Specialty or GP training. Furthermore, the risk

of the GMC withdrawing educational approval is considered too great without detailed discussions and an agreement of support from the GMC.

Options that could be piloted and evaluated:

Options 4 and 5 would potentially be more realistic approaches to achieving the objective of a 48 hour working week (without averaging) for Junior Doctors while ensuring service continuity and patient safety. However, it would also require significant lead-in times to develop and train the workforce and manage the service changes.

These approaches could be combined by redesign of out of hours service provision (reducing the numbers of 24/7 acute care rotas) and by employing and utilising other staff groups. It is, however, essential that the 'fatigue risk' is not simply transferred from Junior Doctors to other staff groups by increasing out of hours workload without robust workforce planning and an appropriate increase in staffing establishment.

It should also be recognised that there will not be a single solution or formula that can be successfully applied across all 70 or so postgraduate medical specialties, all the diverse geographies in Scotland (including remote and rural settings) or across different clinical service models in 14 territorial Health Boards.

Delivering a maximum 48 hour working week for Junior Doctors in NHS Scotland would, therefore, require locally developed and implemented solutions, probably utilising a mixed economy of the solutions identified above, and phased in as the required workforce is developed.

The EWG did not reach a consensus position on further options to implement a maximum 48 hour working week (without averaging) for Junior Doctors in Scotland. The stakeholders did agree that:

Principle Conclusions:

- 3. There is no evidence that implementing a 48 hour maximum working week (without averaging) for Junior Doctors in Scotland will *per se* reduce fatigue and its associated risks**
- 4. Robust, evidence-based recommendations on how to achieve the policy objective of a 48 hour maximum (without averaging) working week for Junior Doctors in Scotland would require more extensive consultation with service and education providers in NHS Scotland, additional expert**

input and potentially further research and piloting of different models in specific regions and/or specialties.

- 5. The challenges, costs and timescales for implementing a 48 hour maximum working week (without averaging) for Junior Doctors through any of these routes should not be underestimated. All potential solutions based on the interventions described in this section are likely to take a minimum of 8 years to implement**

Section 3: Recommendations for improving junior doctor wellbeing and minimising fatigue

The EWG was not able to identify actions to safely achieve the specific Scottish Government policy objective of a 48 hour maximum working week (without averaging) for Junior Doctors in the foreseeable future. There are, however, evidence-based interventions known to combat and prevent fatigue and the consequent risks to patient and staff safety that could be implemented in NHS Scotland (NHSS) in more realistic timescales.

The EWG recommendations are based on analysis of the evidence summarised in section 3.4 (Evidence of Fatigue and relationship to hours of work and rota design). The synergy between the EWG conclusions and key findings (especially key recommendations 2 and 3) of the GMC Report: *'Caring for Doctors Caring for Patients'*, make an even more compelling case for prioritising these changes over interventions designed to achieve the 48 hour working week (without averaging).

In addition, the proposed changes in rota design, (specifically introducing a limit of 4 long shifts in any 7 days) will have the added benefit of reducing the total hours of work in some rotas. This may be considered an interim step to reduce the hours of work in the longer term.

Recommendations (in addition to current policies complying with the Working Time Directive) that could be implemented across all Health Boards, training centres and specialties with an established evidence base:

Principle Conclusions:

6. Improving Facilities:

- Overnight rest areas for all night shift staff
- Sleeping facilities for post-night shift staff who are too tired to drive home and/or arrangements to be driven home
- Provision of nutritious food and drinks for all night shift staff

7. Improving Rota design

- Sharing best practice in 'intelligent' rota design across NHS Scotland Health Boards utilising IT programmes and the PCAT Improvement process- see Appendix 10
- Implementing the revised educational approval process developed by NES (section 3.2)
- Minimising frequent transitions between day and night shifts and prioritising forward-rotating (day-evening-night) rota designs
- Restricting consecutive days of long shifts (greater than 10 hours) to a limit of four in any seven days
- Provide adequate recovery time after night shifts to re-establish normal wake/sleep patterns
- Minimising extreme variations in working week hours by reducing the numbers of zero days and excessive hours worked within individual weeks in a rota; recognising that there will be specialty specific requirements and differences in optimal rota design
- Ensuring a minimum of 30 minutes continuous protected rest and approximately four hours of duty

8. Enhancing Staff Governance:

- Provision of basic education and unit induction regarding sleep, fatigue and working nights for all night staff
- Review the recommendations of the *Health and Care (Staffing) Bill* (2019) in relation to implementing safe medical staffing tools to combat fatigue
- Develop a supportive culture that encourages and enables night time staff to nap during breaks to combat fatigue

Implementation and Next Steps:

The EWG are aware of innovations and areas of excellent practice within NHS Scotland in relation to many of the above recommendations. There is, however, neither a consistent set of standards nor an implementation strategy across all NHS Scotland Health Boards to establish such uniform standards to facilitate the spread of best practice.

The publication of the GMC Report *Caring for Doctors Caring for Patients* (November 2019) and the *Scottish Government Health and Care (Staffing) (Scotland) Bill* (May 2019) provide timely catalysts for developing a national approach to improve standards and outcomes in relation to staff wellbeing and

combating fatigue in all staff groups. This should include Junior Doctors working non-resident on-call rotas which were not part of the EWG Programme of Work.

Such improvements would be facilitated by a policy decision to develop and implement a Scotland wide consensus approach based on the seven key recommendations in the GMC report, supported by the development and implementation of safe medical staffing tools referenced in the safe staffing legislation. This would help ensure equitable solutions across different specialties and geographies in Scotland and the sharing and spread of best practice.

Individual Health Boards would be required to generate action plans for implementation from 2020, with the ongoing support of Scottish Government Workforce Advisors.

7. Acknowledgements:

I would like to thank all members of the working group for their diligence and commitment in taking forward this programme of work and for their willingness to explore different options for achieving the objectives set out in the Terms of Reference.

I would particularly like to thank Danny McQueen as the public partner on the group, for his many thoughtful observations and suggestions and for helping to keep us focussed on the core purpose.

Luke Yates and Lewis Hughes jointly undertook the literature review on evidence based interventions to reduce the risks associated with fatigue.

In addition, I would like to thank Alex Rice and Chris Sheridan, the Scottish Government/NES Clinical Leadership Fellows who participated in the work of the group from the beginning and who spent many hours developing and writing up different rota options for the group.

I would also like to thank Members of the Scottish Government Health Workforce Pay and Conditions team who provided support for the group, including Chris Raftery, Carolyn McKerracher, Pavel Stroeve, Sandra Neil, and Jack Ashton.

8. Appendices

1. EWG Terms of Reference
2. Hairmyres 48 hour maximum working week pilot rotas
3. Comparison of pre-existing and revised 48 hour maximum Hairmyres rotas
4. NES Educational approval analysis for revised 48 hour maximum Hairmyres rotas
5. Request for Educational Approval of Draft Hairmyres University Hospital Rotas – 48 hour maximum working week (without averaging)
6. Staff feedback from the NHS Lanarkshire pilot visit
7. NHS Education for Scotland revised rota educational approval checklist
8. References for 'Evidence of Fatigue and relationship to hours of work and rota design
9. Table: benefits and risks of options for achieving a 48 hour maximum working week (without averaging) for Junior Doctors in Scotland
10. Professional Compliance Analysis Tool - PCAT

Appendix 1: Junior Doctors' 48-hour Expert Working Group Terms of Reference

Overview

NHS Scotland is a first class health service that provides high quality care to the people of Scotland, and is a world leader in the training of Junior Doctors. By enhancing our Junior Doctors working lives, health and well-being, we can contribute to a sustainable workforce that delivers a high level of training, professionalism, clinical care, and safe working practices. To achieve this, Scotland requires:

- A high quality, motivated Junior Doctor work force which contributes to safe and effective healthcare supported by high quality postgraduate training and best employment practice.
- Best practice guidance and compliance to rota design that balances education and training requirements with medical service continuity whilst recognising and supporting the work life balance of Junior Doctors
 - A safe operational level of Junior Doctor vacancies across all disciplines – an organisation the size of NHS Scotland, will always have vacancies, but within any discipline, these must be kept minimal and managed to ensure clinical safety and reduce fatigue and stress for Junior Doctors.

- To reduce the demand for temporary staff and the associated costs

Fatigue is recognised as a significant risk inherent to Junior Doctor working, with resultant effects on Junior Doctor safety and wellbeing, retention and absences and patient safety. Progress has already been achieved on improving the working lives of Junior Doctors, by ending the practice of working for seven successive nights, reducing the average maximum number of hours from 58 to 48, introducing (from August 2019) a minimum break of 46 hours following full shift night working and the provision of single employer status for Junior Doctors through the Shared Service programme.

EWG Purpose

It is proposed that the Junior Doctors' 48-hour Expert Working Group will develop risk assessed options for implementing a 48-hour working week (without averaging) taking into consideration Junior Doctor wellbeing, the effects on education and training, continuity of safe and effective service provision and the impact on other staff.

The Group will take a phased approach to how best to develop potential solutions taking into account associated risks and potential mitigation, reporting as outcomes are achieved or significant stages are reached. The initial phase will be to consider the existing rotas and how they impact on patient safety, training, resources and the effect of fatigue by:

- Evaluating available evidence on optimal rota design taking into account the priorities of continuity of excellence in patient care, training and education and the wellbeing of Junior Doctors.
- Analysing and modelling of current Junior Doctor rotas across Scotland, with the aim of identifying best practice and the reasons for variation in practice
- Liaising with other groups working on overlapping areas relating to staff wellbeing to ensure coordinated and consistent workstreams and objectives
- Working with NHS service and medical managers (across different geographies and specialties) to explore opportunities to pilot and evaluate potential rota innovations and changes that work towards the objective of a safe 48 hour maximum working week and the impact on patient care, training and education and Junior Doctor wellbeing.
- Developing recommendations for best practice in rota design and innovation with the aim of reducing Junior Doctors' hours and improving their working lives, taking into account the impact on service continuity, other staff groups and flexible bank/agency arrangements. (Recognising that different solutions will be required in different health service settings and across different specialties).
- Recommending best practice on rota design across appropriate areas of the NHS.

- Identify potential barriers to effective implementation and make risk assessed recommendations to overcome these.
- identifying the data and information required to monitor and support improvements in the working lives and conditions of Junior Doctors and recommend the processes necessary to support this.

Throughout this time the Group will keep abreast of Workforce Plans and Service Delivery and any potential impact of proposals on the work of the Group. At the end of this phase the Group will report on their findings and suggest proposals for consideration. It may be necessary to initiate further phases involving wider considerations; these will be detailed in the report and would require to be scoped out.

Membership

EWG Membership comprising:

- Independent chair, appointed by Scottish Ministers
- British Medical Association
- Academy of Royal Colleges and Faculties of Scotland
- NHS Education for Scotland
- Directors of Medical Education
- NHS Scotland Management Steering Group
- HIS Public Partner

The Group will consult with/involve other relevant organisations and individuals as appropriate.

Timings

The EWG is expected to draw preliminary conclusions and make recommendations to the Cabinet Secretary for Health and Sport from the initial phase by December 2019.

Appendix 2: Hairmyres 48 hour maximum (without averaging) working week pilot rotas and analysis:

Following on from the formulation of '48hour' rotas, based on those currently in place within NHS Lanarkshire, and continuing to adhere to other parameters as outlined above, an analysis was undertaken to assess the impact of such a change on doctors in training working and the wider NHS. This would be conducted as a tabletop exercise to ensure patient safety and service continuity, and allow the collection of data, to model the impact of the proposed change on existing services.

A number of proxy measures were adopted to measure the impact of the proposed shift to 48 hours maximum grouped into 3 main topic as follows:

Proxy Measure	Work Experience (WE)	Work Life Balance (WLB)	Employee Experience (EE)
Loss of Normal Working Days	X		
Change from Days to Nights/Nights to Days		X	X
Ability to Take Leave (1 week)#		X	X
Impact of Teaching/Training	X		X
Effect on other team members	X		X
Effects on life outside of work		X	X
Number of Weekends Worked		X	

As a proxy measurement we have assessed the ability within the rotas being analysed to take 5 continuous days of annual leave, without the need to swap on call shifts and without working either weekend. The requirement of taking leave on standard days will result in a further reduction in the overall number of standard days that any trainee, of any level is at work, as is currently the case in most rotas.

The first five of these items were assessed quantitatively by analysis of formulated 48-hour compliant rotas. The subsequent areas were assessed qualitatively by collection of information from relevant stakeholders, e.g.

Educational leads with regards to training impact, and others who work in the departments in terms of effects on life and team.

As per guidance from the 48-hour EWG, the tabletop exercise has used rotas which do not exceed 48 hours in any Monday – Sunday 7 day period. Therefore it is possible that >48 hours could be worked if considering **any** consecutive 7 day period. Early modelling based on a 48-hour maximum in **any** 7-day period strongly suggests there would be a starker impact on rotas, which would further adversely impact training time, ability to take leave, changes from days to night, weekends worked and all other proxy measures analysed

Indicative Sum Effects on Training Time & Service Delivery

FY1

Assuming a 4-month placement in the FY1 specialties above (2x medical, 1 surgical), it is possible to indicate how training time is affected by the proposed 48 hour change:

- Increase of 30 zero days (28 v 58)
- Corresponding decrease in standard days by 28 (144 v 116)
- Reduction in training time in FY1 of 6 weeks of training

FY2

Assuming a 4-month placement in the FY2 specialties above (1x medical, 1x surgical, 1x emergency medicine), it is possible to indicate how training time is affected by the proposed 48 hour change

- Increase of 35 zero days (34 v 69)
- Corresponding decrees in standard days by 32 (123 v 91)
- Reduction in training time in FY2 of 7 weeks of training

Overall across the foundation program this would result in the loss of almost 3 months of training over a two-year training programme and 60 days of daytime clinical service cover per doctor on the rota

Junior Surgery

The analysis above covers a 6month junior surgical placement; given this is a role covered by a variety of levels (FY2, GPST and CTs). In order to allow full we will assess the impact of an absolute 48hour rota on a year within this rota.

- >50% increase in zero days
- 30% increase in night to day/ day to night shift changes
- Loss of 54 standard days of training per annum.

Overall this equates to a **loss of over 10 weeks** 'daytime' training per annum.

Senior Surgery

The summary analysis above covers a typical yearlong higher surgical placement.

- Double the number of zero days; from 41 to 82 annually
- 30% increase in night to day/ day to night shift changes
- Loss of 46 standard days of training per annum.

Overall this equates to a **loss of over 9 weeks** 'daytime' training per year.

Extrapolated up over a **6 year higher surgical training** program this equates to a **loss of 54 weeks of training or an entire year of training.**

Overall this would result in the loss of 74 weeks (~17 months) of training over an eight-year surgical training programme & 384 days of daytime clinical service cover per doctor on the rota (~77 days p.a.)

Junior Medicine

The analysis above covers a 6month junior medical placement; given this is a role covered by a variety of levels (FY2, GPST and CTs). In order to allow full we will assess the impact of an absolute 48hour rota on a year within this rota.

- Nearly 100% increase in zero days
- 67% increase in night to day/ day to night shift changes
- Loss of 28 standard days of training per annum.

Overall this equates to a **loss of 5.6 weeks** 'day time' training per annum.

Senior Medicine

The summary analysis above covers a typical yearlong higher surgical placement.

- 29 more zero days, an increase >50%
- >50% increase in night to day/ day to night shift changes
- Loss of 30 standard days of training per annum.

Overall this equates to a **loss of 6 weeks** 'day time' training per year.

Extrapolated up over a **5 year higher medical training** program this equates to a **loss of 30 weeks of training or 7 months of training.**

Overall this would result in the loss 42 weeks (~10 months) of training over a seven-year medical training programme and 206 days of daytime clinical service cover per doctor on the rota (average 77 days p.a.)

Emergency Medicine

- Analysis unclear due to atypical work patterns – would need more specialty input
- For example, the senior EM rota has only 1 standard day per cycle, but a large number of other differing shift times – it is likely some of these shifts would provide core training experience and require different degrees of input from various staff groups to provide a safe service

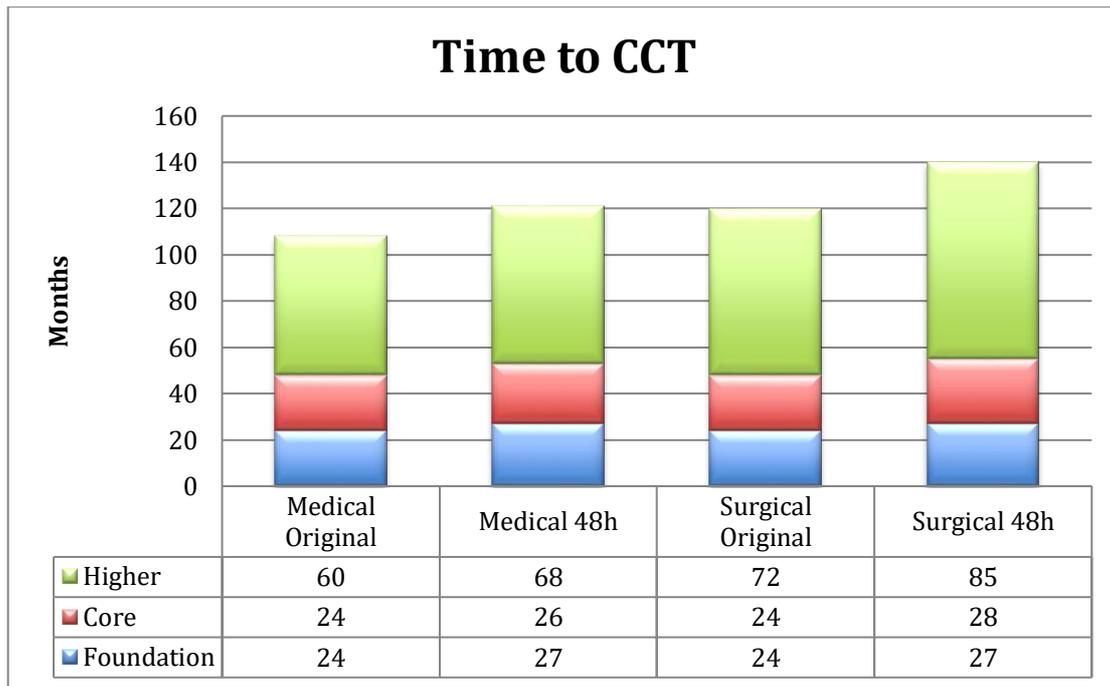
Postgraduate Training & Impact on Time to CCT

Postgraduate training is regulated by the General Medical Council (GMC) on a UK-wide basis, with medical Royal Colleges involved in producing curricula, with which all doctors must comply fully at the expected rate to complete training (gaining a Certificate of Completion of Training – CCT) and obtain work as Career Grade doctors in the NHS. Training programme lengths are fixed within curricula, with doctors in postgraduate training having to obtain certain qualifications, levels and types of clinical experience as they progress – this is often demanding particularly where there are service pressures or shortages for even part of a doctor's training. The implementation of a 48-hour absolute week would, due to restrictions on rostering in order to meet all other legal and contractual safety rules, lead to a reduction in standard working days for trainees, reducing opportunities to meet these requirements. This risks trainees being deemed unable to progress at their mandatory Annual Review of Competence Progression (ARCP), and requiring additional training time in order to fulfil these requirements.

We have assessed the time that would be needed to counteract the loss of training time due to 48-hour working, if the same amount of training is needed as at present, as a proxy for the impact this would have on medical training in Scotland. ***It should be noted however that the current structures and assessments within training do not allow additional training time without awarding trainees an 'unsatisfactory' outcome at their ARCP.***

This was examined in the context of a trainee entering FY1 then directly into specialty training without any career breaks, working full time, with no time out of programme. This has only been undertaken for medicine and surgery as further information is required on the training impact of a 48-hour absolute working week on emergency medicine rotas. In summary there would be an increase of:

- **13 months** to complete medical training
- **20 months** to complete surgical training.



This would have significant workforce implications in terms of the supply pipeline of qualified doctors, by increasing the time to produce a Consultant. In addition, this may make jobs unattractive to those outside of Scotland, or even to Scottish trainees who could train quicker (i.e. at the normal rate) within the rest of the UK. As mentioned above, training standards are set at UK level with expectation of progress within a fixed number of training years. It is likely extra training time could only be awarded by the deanery by giving unsatisfactory ARCP outcomes to trainees, if such rotas were approved. This has the potential to impact the long-term career progression and would disadvantage Scottish trainees unless a separate indicative training time for Scotland could be negotiated with the GM, thereby creating separate training systems with the UK.

Appendix 3: Comparison of pre-existing and revised 48 hour maximum (without averaging) working week rotas for Hairmyres pilot study.

An initial numerical comparison was made between the rotas comparing the current rotas and the newly formulated 48hour version. This allowed analysis of many of the parameters as outlined above. As each rota is hugely different they have been analysed individually, both in one revolution of the rota and then as a trainee who experience it in placements over 4/6/12m depending on seniority.

Emergency Medicine Junior

(8 week rota cycle/26 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	10	32	11.5	37	↑1.5	↑5
Weekend	5	16	7	23	↑2	↑7
Night to Day/ D to N changes	2/2	7/7	2/2	7/7	=	=
Standard days	10	32	9.5	31	↓0.5	↓1
Annual Leave	1	6	0	0	↓1	↓6

Emergency Medicine Senior

(3 week rota cycle/52 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	2	35	6	104	↑4	↑69
Weekend	2	35	2	35	=	=
Night to Day/ D to N changes	1/1	17/17	2/2	35/35	↑1/1	↑18/18
Standard days	1	18	1	18	=	=
Annual Leave	0*	0*	0*	0*	?	?

*Only 1 standard day on rota – unclear which shifts can be taken as annual leave

FY1 Medicine

(10 week rota cycle/17 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	6	10	12.5	22	↑6.5	↑12
Weekend	3	5	3	5	=	=
Night to Day/ D to N changes	0*	0*	0*	0*	=	=
Standard days	29	50	22	38	↓7	↓12
Annual Leave	3	5	1	2	↓2	↓3

*FY1s in Lanarkshire do not do nightshift

Junior Medicine

(17 week rota cycle 26 week placement (except FY2))

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	10	15	19	29	↑9	↑14
Weekend	4	6	5	8	□1	□2
Night to Day/ D to N changes	2/2	3/3	3/3	5/5	↑1/1	↑2/2
Standard days	50	77	41	63	↓9	↓14
Annual Leave	10	15	3	5	↓7	↓10

Senior Medicine

(8 week cycle, 1 year placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	7	46	11.5	75	↑4.5	↑29
Weekend	2	13	3	20	↑1	↑7

Night to Day/ D to N changes	2/2	13/13	3/3	20/20	↑1/1	↑7/7
Standard days	23	150	18.5	120	↓4.5	↓30
Annual Leave	2	13	1	7	↓1	↓6

FY1 Surgery

(9 week rota cycle/17 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	4	8	7	14	↑3	↑6
Weekend	3	6	4	8	↑1	↑2
Night to Day/ D to N changes	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*
Standard days	22	44	20	40	↓2	↓4
Annual Leave	4	8	2	4	↓2	↓4

*FY1s in Lanarkshire do not do nightshift

Junior Surgery

(7 week rota cycle/26 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	5	19	11.5	43	↑6.5	↑24
Weekend	2	8	2	8	=	=
Night to Day/ D to N changes	2/2	8/8	3/3	12/12	↑1/1	↑4/4
Standard days	20	75	13.5	51	↓6.5	↓24
Annual Leave	2	7	2	7	=	=

Senior Surgery

(9 week rota cycle/52 week placement)

	Original		48h absolute		Difference	
	In Rota Cycle	In placement	In Rota Cycle	In placement	In Rota Cycle	In placement
Zero days	7	41	14	82	↑7	41
Weekend	2	12	2	12	=	=
Night to Day/ D to N changes	2/2	12/12	3/3	18/18	↑1/1	↑6/6
Standard days	28	162	20	116	↓8	↓46
Annual Leave	2	12	2	12	=	=

Teaching Attendance

Teaching sessions are an integral and often mandatory part of postgraduate medical training. The following are the attendance requirements at departmental and hospital teaching varies across levels and departments.

FY1

Weekly bleep free teaching Tuesday lunch time; with 70% attendance required over the year to meet curriculum requirements.

	Original			48h absolute			Effect
	In Rota Cycle	In placement	%	In Rota Cycle	In placement	%	
Surgical block	5*/9	10/18	55%	5/9	10/18	55%	=
Medical block	6*/10	11/18	60%	4/10	6/18	40%	↓20%
Overall Percentage attendance*			58%			45%	↓13%

- *Excluding shifts on call for receiving.
- ** Presuming FY1 rotation of 2 medical and 1 surgical block

Medical Senior Rota

Medical teaching across all levels takes the form of:

- Wednesday lunchtime bleep free teaching, in the form of grand round
- Thursday lunch time medical meeting

In order to allow for clarity we will assess the impact for a medical senior trainee over a year in placement, in line with ARCP requirements. This analysis does not take into account any regional or specialty training specific teaching that may be mandatory as part of core or higher surgical training.

	Original			48h absolute			Effect
	In Rota Cycle	In placement	%	In Rota Cycle	In placement	%	
Wed GR	6/8	39/52	75%	4/8	26/52	50%	↓25%
Thurs Med meeting	4/8	26/52	50%	4/8	26/52	50%	=

Surgical Senior Rota

Surgical teaching across all levels takes the form of:

- Friday morning (1130-1230) unit teaching
- Wednesday lunchtime bleep free teaching, in the form of grand round

In order to allow for clarity we will assess the impact for a surgical senior trainee over a year in placement. This does not take into account any regional or specialty training specific teaching that may be mandatory as part of core or higher surgical training.

	Original			48h absolute			Effect
	In Rota Cycle	In placement	%	In Rota Cycle	In placement	%	
Friday Unit	5/9	29/52	56%	4/9	23/52	44%	↓12%
Wed GR	6/9	35/52	67%	4/9	23/52	44%	↓23%

Appendix 4: NES Junior Doctor rota Educational Approval Checklist, 2019

NES Rota Approval Checklist Scotland Deanery

Specialty:
Location:
Grade:
Number of Doctors on Rota (WTE):
Start Date for Rota:

Please tick the appropriate box for each of the following items and attach the rota template and an example of a model roster. Please also attach

- Additional information if any answer is NO to explain what measures are being taken by the department to address concerns.
- Recent rota monitoring report

<p>1. Has the rota been approved by the FPT/TPD/departmental educational lead as adequate to meet curricular and training requirements (i.e. able to attend clinics, theatre, ward sessions, formal teaching, time for QI, etc)</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>2. The duration of all rotations between sites are at least 2-months (specialty trainees) or at least 1-month (foundation trainees – GMC recommendation)</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>3. Confirmation that for all trainees on the rota, the maximum percentage of out of hours working (OOH) is 45% (40% for IST) to ensure sufficient access to educational opportunities (exception Emergency Medicine)</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>
<p>4. All Scottish Government Requirements compliance</p> <ul style="list-style-type: none"> • Post night shifts rest period is at least 46 hours following the final shift in any period of night shift working • No periods of 7 night shifts in a row (ideal maximum is 4 consecutive night shifts) • Maximum of 7 days or shifts 	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>

5. Has time for handover between each shift been included in the rota	Yes <input type="checkbox"/> No <input type="checkbox"/>
6. Has the proposed rota design been discussed with trainees currently on the old rota, and their views were taken onboard?	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. Formal teaching sessions are included on the rota template/model roster for all grades involved in the rota (if not, please provide a description of timing of the formal teaching sessions as an attachment)	Yes <input type="checkbox"/> No <input type="checkbox"/>

*(OOH is defined as any shifts between 19:00 and 07:00 during weekdays and any shift on Saturday and Sunday)

Name and signature of Trainee Representative	Date
Name and signature of F/TPD/ Departmental educational lead	Date
Name and signature of Consultant Rota Lead for Specialty/Department	Date
Name and signature of Doctors in Training Monitoring Team Leader	Date

Please attach

- The rota template and an example of a model roster
- Attachments required if the answer is NO on Rota Checklist
- Recent rota monitoring report

Appendix 5. Request for Educational Approval of Draft Hairmyres University Hospital Rotas – 48 hour maximum working week (without averaging) (Professor Clare McKenzie in consultation with other Postgraduate Deans)

We recognise that these are theoretical rotas and would highlight that in most departments, currently, a full complement of doctors in training is not the norm. Therefore, in practice, the concerns around attaining curriculum competences/capabilities are likely to be compounded when gaps in rotas and unanticipated leave are taken in to account.

Educational approval is primarily based on the ability for doctors in training to be able to access training opportunities described in their respective curricula which includes both on the job training and formal teaching. Added to that is the need for supervision appropriate to the trainee level. For doctors in training to learn appropriately, rota structure (shift lengths and breaks) as well as the frequency of unsocial work should be considered (which impacts on work-life balance, family and relationships). Both of these are important and can influence the attractiveness of posts.

Lastly, the proposed rotas seem to offer less frequent team working and less frequent continuity of care which both are known to adversely impact patient safety and care. Service leads would need to consider how to mitigate this with other members of the multiprofessional team and what would be the workforce consequence.

It has been challenging to consider these rotas in isolation of knowledge of service delivery and local organisation of training. In relation to specific rotas submitted for this exercise:

Medicine rotas

1. Foundation 1 rota. The foundation curriculum is generic and competences/capabilities are achieved throughout a training year in multiple different posts which means that, generally, it is easier for foundation doctors in training to achieve the curriculum requirements because of the varying environments that they will work in.

Summary - This rota could be approved (as there is a consistent shift time and largely daytime activity), provided that formal teaching can be accessed and that there is sufficient supervision. The former requires to be clarified and timetabled into the rota and service requirements. The latter would need to be guaranteed for foundation doctors in training and patient safety and it is not entirely clear whether this will be possible from review of the higher medical rota. Greater amounts of supervision may be necessary by consultants.

2. FY2/GPST/Junior StR rota. The above comments regarding foundation apply for the foundation doctors in this rota. There are concerns that this is a rota involving doctors with different levels of competence. Ensuring clarity of these

doctors' competences by all members of staff will be essential for patient safety. Supervision arrangements will need clarification before this rota could be approved. For the GP STs there is insufficient information to ensure that allows them to meet curricular requirement around attendance at outpatient clinics. For the Junior StRs, again insufficient information and assurance that they will be able to attend the clinics or intensive care requirements of the IMT curricula.

Summary – rota will need modifications to ensure that the doctors in training within the different programmes can achieve their competencies/capabilities. F2 supervision requires to be described, GP ST access to clinics and GP teaching programme, Junior StRs are able to attend sufficient clinics to meet curricular requirement (particularly important for new IMT programme)

3. Senior Medical StR Rota. The reduction in daytime training activity is noted and would be expected to reduce the opportunity to attend clinics. This is likely to be especially problematic for those in higher medical training, although not restricted to this group, who need to gain the procedural competences required of the curricula. There are already challenges to achieving these requirements in some higher medical specialty training programmes. This could potentially affect training progression.

We note the frequency of weekend working which could make the posts unattractive.

Summary – this rota cannot be approved for those in higher medical training as there is insufficient access to both general and specialist clinics. If more clinics were to be timetabled outside of the standard working week and which could align to trainee working, educational approval might be possible.

Emergency Medicine rotas

1. Foundation and GPST Rota looks less than optimal with variable start and finish shift times. It is unclear how safe handover would be arranged and whether doctors in training would have access to the formal teaching programme. There is concern about the shift pattern leading to potentially tired doctors and poor sleep patterns which do not promote wellness.

Summary - this rota would not gain educational approval and a remodelled rota would be requested which shows more pattern to shift patterns, describes handover and incorporates formal teaching.

2. For senior EM StRs there is a lot of out of normal working hours activity with concern about the amount of supervision and training that will be provided. The detail of the consultant rota is important to understanding how doctors in training will gain their competencies/capabilities. Information about how formal teaching will be provided with this rota is needed. The shift seems to finish at 2 am which seems unreasonable and potentially negative for recruitment and retention.

Summary more information is required to comment upon this rota.

Surgery rotas

1. Foundation rota – the comments for this rota are the same as for that foundation medical rota.

Summary – potential for rota to be approved with need for clarity on protection for formal teaching timetabled into the daytime rota and for clarity as to who is supervising doctors in training at all shifts.

2. Foundation/GPST rota – the comments for this rota are similar to that for foundation/GP medical rota. There is a need to describe how the different doctors in training will achieve their respective curricular competencies/capabilities. GPSTs require to be able to attend clinics and attend their formal teaching.

Summary – rota will need modifications to ensure that the doctors in training within the different programmes can achieve their competencies/capabilities. F2 supervision requires to be described and GP ST access to clinics and GP teaching programme.

3. Senior StR rota. There is concern that core higher doctors in training will lose opportunities to attend supervised daytime sessions especially theatre sessions which are needed to gain the curricular competences. This could compromise the objectives in the Improving Surgical Training (for core training) initiative. It is noted that clinics and operating lists do not occur on everyday time session hence doctors in training may be present but these training opportunities are not available. This is likely to affect progression through training. Additionally, there are some concerns about the short turnaround of the long day to the next day (11.5 hours) as it is not always possible to leave on time. This, added to any commuting time, may result in very little real rest time. For educational approval, further explanation would be required which addresses how education/training will be provided out of hours by the consultants or whether alternative training options will be provided (regular simulation could help but would not be a replacement).

Summary: the rota cannot be approved for the above reasons. Potential options to address the reduced access to the training opportunities could be explored which might involve increasing the number of theatre/clinic sessions to cover all week day sessions, adding regular quality assured simulation, extended day operating sessions.

Appendix 6: Staff feedback from the NHS Lanarkshire pilot visit

General Points

Concerns were voiced from all groups and specialities being represented.

Main issues stemmed from lack of staff to physically cover all of the clinical areas required resulting in higher workloads across all, poor continuity of care and of training, with an overall detrimental impact on patient safety.

Would also impact on consultant working with an inevitable increase in outpatient clinic waiting times and elective theatre cases thereby directly affecting government targets. Concern was also expressed about the attractiveness of the Board (and Scotland) as a location to work if this were implemented, due to the poor work-life balance created by new shift patterns, workload and lack of support on shifts due to reduction in medical staff available at any point, and the lack of education that could be delivered within these constraints.

Some groups considered how many more doctors we might need to deliver this proposal without significant detriment. “30%” more? Definitely more than we have now” – a feeling we are already stretched for staffing with ever increasing demand.

There was also some feeling that looking at junior doctors as an isolated group wasn't helpful as it didn't promote team culture and may lead to resentment over their “special” protections if the proposal went ahead. There was also not a clear argument over why this rule shouldn't apply to everyone if the evidence said it was a good idea [NB – see earlier papers/minutes of the 48h EWG for more on this – no clear evidence for 48 hours with no averaging]

Service Impact

- Insufficient juniors staffing across all levels to cover all clinical areas
 - 48h rotas – simply not enough FY1s on day time work to cover all the wards (have proportionally less FY1s than other units as they do not work nights)
 - At times one FY/SHO would need to cross-cover 2 wards (medical and surgical) – this is not safe or feasible
 - Insufficient staffing for receiving (medical and surgical)
 - Would need to alter consultant working in A&E to counteract the loss of trainee time in the department
 - Medical service ‘could not cope’ especially on Mondays and Fridays with the loss of daytime staff
- A sense with new rotas it would be “like induction week all the time” – (referring to August changeover when all staff are getting mandatory induction and other clinical staff find the shortage extremely challenging)

- Loss of continuity on wards; issues for wider team working and the benefits that go along with this (for all members of staff and patients)
- Inevitable effect on waiting list targets:
 - Surgical clinics would need to be capped at around 8-10 patients (i.e. manageable for one consultant only without a registrar) thereby taking away the flexibility that is there currently to add on other/emergency patients (currently run with 14-20).
 - Similarly many theatre lists need two surgeons (usually consultant and trainee), if a trainee could not be guaranteed this adversely affects waiting times, especially for more complex cases
- Felt it was extremely likely that consultant job plans would need to change to accommodate this reduction in trainees.
- Initially the new rota looked a lot better; however after discussion it was felt that continuity of care would be lost due to frequent changes in working pattern, discharges would take longer. Continuity of care was repeatedly mentioned.
- It was felt the half day suggestion would go down badly. It was felt that if you were in for a half day you would be inclined to work on as if you were already at work it was felt you would stay on.
- Trainees talked about fatigue and feeling worn out. Trainees felt a straight run of nightshifts were better as changing from day to night working could impact on sleep, health and childcare, it was less predictable than the current rota.
- Again, continuity of care was discussed with the new rota and handover and that things may be lost in translation and will impact patient care.
- Also, trainees mentioned 'first night syndrome' experienced when starting night shift and not quite switched; they feel most tired at the end of the first night, therefore this would happen regularly if there was not a straight run of nightshifts. 1 nightshift could wipe out 3/3 days.
- FY trainee didn't anticipate any issues with the new rota, longer shifts would be split over a longer period of time.
- Trainees felt it would be really good not doing 5 days of receiving in a row.
- Again, the group discussed the half-day and felt this would not be helpful. Most training happens in the afternoon therefore half day finishing in the early PM would not be helpful for training purposes and trainees frequently stay on therefore trainees typically work a full day but are only getting paid a half day.
- A & E trainee again discussed 'horrendous' nightshifts and no scope to take A/L. It was felt the new rota's the service would need to make provisions for medical cover
- A&E "Demand has vastly increased. I wouldn't want to be the trainee on" [on these new rotas]
- HR – felt there would be less daytime cover and that training could be difficult. Split weekends for juniors would not work.

- Current rota once a month and time is protected.
- FY – new rota – lots zero days land Tuesday. FY teaching is a Tuesday, so this would need to be revised.
- Study Leave – currently pretty inflexible in A & E. New rota no standard days so could work.
- Different specialities have different needs and intensity.
- Need more training numbers
- Need for additional trainees or other medical staff to cover rota gaps
- Expected increased locum costs from new rotas, also less flexibility of internal cover as trainees couldn't really do **any** additional shifts without breaching the new 48 hour rule [service manager group]

Staff and Patient Safety

- Huge concerns regarding patients safety given the loss of continuity as a result of the reduced working hours; this has an effect across all levels and specialities.
 - As mentioned above not enough foundation doctors to cover all wards
 - Few weeks where trainees would spend the entire week on the same ward
 - This lack of continuity on the same ward has been flagged a recent deanery visit in respect of the current medical foundation rota – the situation would be worsened by the new 48h rota.
- “Huge impact on safety and site flow performance” [service manager group]
 - “Prolonged stays while awaiting treatment would increase risk of patient harm”
- “It doesn't feel like safe staffing at the moment” (and would be reduced further by this proposal) [service manager group]
- Doctor not working as many hours may be safer
 - But conversely reduction in availability would increase risk
 - Would lead to greater expectations on shift which might be negative – would increase in pace lead to more errors? Same number of patients still, just fewer doctors to look after them [service manager group]
- Knowing your patients results in better care; things are less likely to be missed and the care they receive is likely to be more efficient and streamlined

- Concerned this would result in much higher rates of burnout amongst trainees as, due to the reduction in staffing (especially during week time), the workload and burden whilst at work would be far greater
- Increase in number of handovers, higher change of critical information being missed
- Concern in increasing numbers of day-to-night shifts; known amongst the consultant body to be a time of higher risk
- Effect on other staff groups:
 - Consultants will have to take on more work to cover, concerns regarding consultant wellbeing. They have no such safeguards when it comes to hours worked per week
 - Concerned of the resilience of trainees; how would they cope as consultants should this be implemented? (i.e. protected during training, only working 48h then potentially huge increase in working hours on receipt of Certificate of Completion of Training)
 - Staff grade, associate specialist and specialty doctors would not be affected by this change, likely further increasing the marginalisation of this group.
- Medical SHO cover – real problem less than 3 people on. It's already a stretch at present.
- Care of the Elderly would now only have 1 doctor covering 5 wards and ~120 patients. Also demand is increasing particularly in Hairmyres as this is an ageing population – likely to be overwhelming for this doctor vs. previous rota [service manager group]
- It was felt that with the new rotas people just wouldn't leave and would end up working longer. People wouldn't get discharged and this would impact adversely on health, fatigue and decision making.
- Current rota once a month and time is protected.
- FY – new rota – lots zero days land Tuesday. FY teaching is a Tuesday, so this would need to be revised.
- Study Leave – currently pretty inflexible in A & E. New rota no standard days so could work.
- Different specialities have different needs and intensity.
- Need more training numbers
- Minimum safe staffing for nursing can be calculated using computer tool (based on number of patients/beds) – can't we do this for medical staff using e.g. Royal College guidelines? [service manager group]
 - Noted safe staffing bill currently progressing through parliament which might inform this
- Negative impact on waiting lists – feeling can't really do any more already, with additional clinics/lists already added to meet targets

Employee Experience

- Concerns regarding inability to take adequate amounts of continuous annual leave
 - Would take annual leave on weeks of normal days thereby further reducing the number of staff working at these times.
- Noted more “days off” (due to required zero days) which might be positive
 - More “chopping and changing” felt to be “not good work-life balance”, with group noting “it’s been shown to be bad for your heart, for diabetes”
- Noted junior doctor annual/study leave “not accounted for” in the same way as nursing staff rosters do – often teams just need to do without staff when off – more vulnerable still if this proposal implemented with fewer staff [service manager group]
- Noted that many nursing teams seem to manage 48 hours without averaging – group asked to consider what lessons we might learn from this – noted breaches of 48h were allowed, but if consistent and overall excessive hours is escalated to a manager which triggers a discussion with staff member (e.g. those choosing to do overtime regularly) – e-rostering does help to identify this [service manager group]
 - Noted that nursing workforce larger and as several work on each shift on every ward, it is much easier to have flexibility to deliver this model
 - “If 12 hour shifts weren’t a thing there would be more flexibility” (but acknowledged would need more medical staff and fundamental service change in any dept. who did this to continue to cover service safely)
- Much less likely to work on same ward/with same team, reduced job satisfaction
- “Would worsen team structure, more shift changes and in less together”
 - Also this would “lose the importance of handing over as a team” – also potential patient safety risks in this
 - Group also noted that original EWTD being brought in (48 hours with averaging) had adversely impacted team working and continuity already, despite the hours reduction being positive
- Nurses and other team members much less likely to know ‘their’ juniors/trainees
- Higher workload whilst at work
- Increase in weekend working across many of the rotas, with some now containing split weekends (A&E junior) to facilitate 48hour working
- Half days which have been utilised on the 48hours to maximize hours at work would not work; feel most trainees would feel obliged to stay.
- New rota looks better but would depend what it looks like in practical terms.

- Medicine registrar – doesn't look widely different but it could be a challenge to get speciality training. Would be increase in days not being at hospital and would get a lot of assessments done when on call.
- Trainees currently not getting to clinic.
- Surgical trainee losing days would have a major impact and would need to come in on days off just to meet the numbers required as part of surgical training.
- Discussed that may need extended, the group felt this could work for some and not for others. It was felt that if trainees are at work less they are effectively working LTFT and may as well just apply for LTFT. It was felt that if training time was extended it may put people off applying to Scotland. It was felt that it would be hard to find a way in the new rotas that would work for everyone.
- Trainees again discussed fatigue and intensity. It was agreed that they all probably work roughly the same hours but some specialities such as A & E are more intense
- Impact on team – not enough people on the rota, more nurses may help, people regularly staff past their shift.
- Scans – ½ day – results come back in the afternoon – no one to discuss and come up with plan
- On call – for emergencies not routine so would need to wait until next day leading to a delay.
- Better for my wellbeing to split long day shifts but not good for continuity of care or for taking annual leave.
- No to half days
- This rota looks better for work-life balance. –Medical junior tier
- I like the idea of splitting up the long shifts. – FY1 medical
- Keep blocks of long days together so I can plan my life better. Get them all out of the way at once. Helps with child care and taking leave.
- Half days are a terrible idea.
- Please don't give me 1 night shift. I find the first night shift the hardest. I'm always exhausted at the end of the first shift – 'first night fatigue' but then I get into the pattern by the second night. Not good for my health or the patients.
- Too much switching between days and nights.
- Spreading out long shifts may reduce burn out.
- No opportunity on ED senior rota to take any leave at all on this rota.
- Don't like multiple handovers, I like to know my own patients. Increase time, increased mistakes, and increased errors.
- "Evening very demanding time. Reduced senior cover will be negative. Poor for morale" [service manager group]
- Impact on nursing staff++ in workload and what they might need to manage with less medical availability [service manager group]

- Potential to develop more extended roles for Nursing/AHPs – this might be attractive and present more advancement opportunities which nurses are keen for (additional cost though) as well as better continuity of care in the longer term as these would be permanent roles rather than juniors who rotate frequently
 - Noted that originally developing and rapid expansion of these roles left somewhat of a chasm – few experienced staff nurses were left on wards, with experienced nursing becoming ANPs/Ward Managers etc. and most staff nurses being the newly/recently qualified – perception this was not positive for day-to-day ward based patient care – risk would need mitigated
 - Group considered are we even training enough nurses to allow for this or would it just lead to more gaps on the wards?
- Felt nurses would have to escalate more work to Consultants if juniors not available, or delays due to less doctors resulted in patients becoming more unwell and then needing seen by a senior. Felt that Consultants already do not have the capacity for this
- Acknowledgement some work could still “be done better” and that “learning by default” could be the usual rather than a good educational structure – this could potentially improve efficiency

Educational Quality Impact

- Overall felt that resulting increased demand on doctors from the changing rotas will adversely affect education
 - Around 3-4 fewer doctors per day in most departments/rotas leads to more pressure on the remaining ones
 - Acknowledged still would need to hit national targets e.g. 4 hour wait, 12 week treatment target etc.
 - Consultants having to pick up more work due to reduced junior staffing would further reduce their ability to teach as well as junior’s ability to attend
- Again major concerns voiced across all specialities regarding all levels of training
- Surgery
 - Currently work in team based 1:1 system (consultant: higher trainee) with cross cover for training
 - Reduction in training time, frequent repetition needed more so in craft based specialties
 - Huge reduction in the ability to attend the same theatre lists/clinics with massive impact on training progression and ability to meet curriculum requirements

- Reduction in 'trustability'; specifically the relationship developed between consultant and trainee over a prolonged period of time.
 - Reduced continuity of care (especially post op) □ patient safety issue
 - Higher rates of 'failure to rescue'
 - Insufficient time for attendance at teaching for junior trainees
 - Loss of 'informal' teaching of junior trainees from those more senior
 - Would be unable to meet the requirements for core or higher surgical training
 - Should this rota be put in place it would have to be flagged to the colleges and likely trainees would be removed
 - Would not meet minimal requirements for core or higher surgical training.
- Medicine
 - Concerns as mentioned above regarding lack of continuity on current rotas
 - 'Taster nights' for FY1s hugely popular; would struggle to facilitate the study leave to allow this to happen
 - Also need sufficient senior staff to supervise them at on these shifts
 - Would be almost impossible to get IMT and higher medical trainees sufficient clinic time based on the parameters set in their curriculums (this is an issue on the current rotas)
 - IMT ST1 = 20clinics
 - IMT ST2 = 40clinics
 - IMT ST3 = 20clinics
 - Senior trainees would struggle to meet requirements of their individual higher medical curriculums
 - Would fail to make teaching attendance across all levels
 - Teaching could not be repeated as insufficient consultant time
 - Reduced supervision across all levels in view of reduced senior staffing at higher tiers
 - Impact on ability to take study leave
- Emergency Medicine
 - Senior rota would be unworkable
 - Would be unable to provide adequate educational opportunities in view of the increased number of zero days
 - Increase in weekend working – not best for training.
 - Reduced senior staffing to supervise juniors.
- Overall feeling of the loss of training time would be hugely detrimental to all trainees

- Potential for higher rates of poor ARCP outcomes as training needs would not be met leading to extension of training and potentially issues gaining further training/time out of programme/ consultant jobs
- Scotland wide 'extensions' to training would also not be attractive as this would take us out of sync with the other UK nations
- Current rota once a month and time is protected.
- FY – new rota – lots zero days land Tuesday. FY teaching is a Tuesday, so this would need to be revised.
- Study Leave – currently pretty inflexible in A & E. New rota no standard days so could work.
- Different specialities have different needs and intensity.
- Need more training numbers
- Losing more than 50% of my standard days will be devastating on my training. I will not be able to complete the curriculum: not enough time in theatre, not enough cases in log book, not enough continuity with my clinical supervisor/trainer, not enough opportunity to do WBA.
- Would loss the 'team culture' by doing loads of nights and zero days.
- "Less clinic time and less time on ward with others. If we dilute training too much, juniors would not be seen as part of the workforce by other staff". – [Potentially harmful to training, wellbeing and workplace culture] [service manager group]
 - Risk consultants escalated to more often and "juniors will be left doing admin rubbish" [not valuable for training]
- Would not be able to go to clinic and therefore not be able to pass my ARCP.
- "If this was done across Scotland, how would anyone be able to meet their training requirements?" [service manager group]
- Lots of zero days will impact of training
- FY1- we would like to do nightshifts (with appropriate supervision) as these are a fantastic learning opportunity and it would ease the transition to FY2.
- 48hr average week would be disastrous to craft specialities training.
- Can still do SLE on call but would loss daytime training opportunities.
- Reduced time with own supervisor.
- Increased intensity of work equally bad for burnout!
- Study leave would be difficult to take due to inflexibility of the rota with swaps.
- Feeling that rotas would lead to more need for/use of locums and that overall this creates less of a training ethos and overall would be detrimental to educational quality in depts

Appendix 7: Rota exercise at Hairmyres Hospital

Background

- The present contract is not particularly popular
- Main issue is 12-hour shifts: fatigue and recognised underperformance near end, no consultant presence, delays in handover mean work longer hours than rostered
- Varies according to individual specialities and stages of training
- No single rota will ever be acceptable to all
- Appreciate being involved in rota design and that HR at Hairmyres very helpful in providing solutions to issues when planning study time, annual leave and emergency absence

Service impact

- Proposed rota for 48 hr max working week, without averaging, looks attractive and could be better than the existing rotas
- Continuity of patient care may decrease by reducing weekly contact with patients
- A&E going to 4 on a 12 hour shift not sustainable for the workload and is a patient safety issue
- Similarly having only 3 on duty for Friday evening in A&E is not feasible – very busy
- Rota gaps will remain a problem – fatigue and stress for solo-working juniors
- Additional work for HR department, and may need to employ more locums. Better to spend the funds on training more doctors/specialist nurses, but that requires long-term planning and a more strategic approach

Staff and Patient safety

- Continuity of care will be compromised by reducing trainee and Consultant daytime cover
- The reduction in working hours will inevitably affect the patient experience, in terms of waiting longer to be treated (assuming demand from the ageing population continues to increase)
- Changing working hours for junior doctors could adversely affect other NHS workers – consultants, nurses, allied health professional and support staff
- Team working is crucial in healthcare, and the consequences of making changes for one group need to be carefully considered in order to retain goodwill and collaboration in teams
- Fatigue being experienced by junior doctors is a recognised risk to patient safety, and to the trainees' personal safety and well-being. This may improve with the proposed rota

- Electronic patient records with automatic updating of e.g. lab results and ready accessibility would enhance the ability to deliver safe care to patients and reduce inefficiency
- Provision of quiet restroom and taking a nap during night shift, taxi home when fatigued and realise that driving home, sometimes long distances, could be a danger to public and themselves. The evidence of increased risk is appreciated, but it is not realistic at present to take precautions - because of workload and admin aspects for arranging the support.
- Fatigue isn't just about the hours worked, it is also the workload, the support available, and the ability to take a break during e.g. a 12 hour shift. A short shift running with a gap in the rota can be very stressful for the individual junior trainee.

Employee experience

- 12-hour shifts in busy units lead to “decision fatigue” - max should be 10 hours, as last 2 hours of a 12-hr shift are generally when tiredness becomes a patient and personal risk
- Unable to take break(s) during 12-hour shifts, or shorter shifts, and at weekends because of lack of workload and lack of cover for break times. Know should take a break, but workload makes it impossible without compromising patient care.
- Stress associated with juniors taking decisions is heightened by lack of Consultant presence at night and weekends, particularly relevant for handover for deciding on the patient's care plan at a time when workload means junior doctors are commonly fatigued. Varies according to the Unit.
- Junior doctors are commonly less likely to seek advice from on-call Consultant than more senior SR trainee doctors. Use modern IT to dialogue with on-call SR/Consultant, or require the senior colleague to call in, e.g. before end of shift.
- Having electronic notes available would increase efficiency and reduce stress for junior doctors, and could reduce risk for patients. Still need face-face with staff during handover
- Like not doing Friday receiving
- Split weekends as an option
- Half day rostering is not a viable option. Personal experience is that you end up working on until 3pm.
- If required to come in for only a morning, would inevitably stay longer – psychology
- A single night is not acceptable in the rota. Prefer a series of 4 nights, and it is the first night that is most disruptive as adjust to change in sleep pattern
- Avoid rostering nights following back shifts
- Good for F1 to have a taster experience of working nights (Mon-Thurs) but needs more senior trainees available to supervise them
- Study leave looks good, as is the case at present
- Flexibility and collaboration with Consultant (ES, CS) and HR is a key factor in achieving optimal work practice and personal well-being

Education Quality Impact

- Reducing trainee and consultant daytime cover will affect training of juniors and continuity of care
- Prefer to have training experience with one designated Consultant, rather than a random allocation of trainee and Consultant (CS) to meet a 48-hour max rota without averaging
- Could work if increase the number of junior doctors, Consultants, specialist nurses, phlebotomists available at crucial times in what is a 24/7 operation being run at present on a five day working week
- Non-clinical days are good in the rota, as are zero days
- Need to protect training days – looks OK on the proposed rota, similar to existing
- Does 4 hours per week education time fit the revised rota?
- Need to ensure that teaching doesn't affect zero hour days on a regular basis
- Extending training time to achieve the 48-hour (without averaging) target would suit some, but overall this would not be desirable. Would put Scotland out of sync with England/Wales/NI, and could adversely affect recruitment. Would the Colleges/Deaneries allow national differences, given they are responsible for postgrad education and training on a GB-wide basis. In any event many trainees already take time out or work less than full time - prolonging time to receive Certificate of Completion of training is not attractive for most trainees
- Some aspects of local and regional training days could be enhanced by using IT to access course/material remotely – i.e. distance learning on-line. Most trainees prefer to attend in person so as to ask questions and network with fellow trainees, but IT would be useful when rota clashes make it impossible to attend. There are problems in accessing resources on-line within hospitals, so this should be solved to enhance education and training in a shorter working week

Final discussion of key points (all groups together)

- Overall, willingness to consider changing rotas, and appreciation of being consulted
- Consultants would be unable to deliver F1 teaching on this rota – impossible to run it, and would no longer be able to train junior doctors
- Question of how the “New Deal” and minimum staffing levels, currently with Scottish Government, will impact on the 48-hour without averaging working week for junior doctors?
- The rota would reduce team working, and affect the work of nurses and Consultants
- Takes time to recruit and train specialist nurse practitioners and doctors (medical student through to Consultant)
- Nurses are on a 37.5 hour working week, and that may compromise teamworking with junior doctors who are working the revised rota
- Generally accepted that shifts should not exceed 10 hours in terms of safety of patients and staff. Flexibility is needed for e.g. surgery, A&E, but goodwill of staff should not be compromised by inadequate staffing levels

- Generally agreed that main problem in the NHS is the need for more staff
- Ultimately improving patient healthcare and well-being of NHS staff is a political matter relating to resources (funding), rather than one for HR/doctors/nurses/AHPs

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Lewis Hughes and Luke Yates

Appendix 9. Benefits and risks of options for achieving a 48 hour maximum (without averaging) working week for Junior Doctors in Scotland

Table summarising advantages and disadvantages change management options for achieving 48 hour working week (without averaging) for Junior Doctors in Scotland

	Benefits	Risks
Option 1: Increasing Junior Doctor establishment	<ul style="list-style-type: none"> • Improves critical mass of trainees in programmes • Potential to re-establish trainees working and learning in consistent teams • Potential to improve service delivery and continuity of care 	<ul style="list-style-type: none"> • High cost • Initial estimates suggest around 30% increase in trainee numbers • Insufficient numbers of post-Foundation doctors to recruit • Lead in time potentially 8 plus years (to include increasing medical student numbers) • Increase requirement of senior medical staff time for educational supervision
Option 2: Restricting postgraduate medical training and education to 4 or 5 centres across NHS Scotland	<ul style="list-style-type: none"> • Potential to focus resources on fewer training centres and improve quality of training • Greater critical mass of trainee doctors learning and working together and collectively • Increased critical mass in training centres can improve training:service balance and improve hours of work for Junior Doctors • Potential to re-establish trainees working and learning in consistent teams • Potential to improve service delivery and continuity of care 	<ul style="list-style-type: none"> • Postgraduate medical training is enhanced by exposure to multiple clinical environments and geographies • Evidence that local recruitment and retention of career grade doctors is enhanced by high quality local training experiences • Cost of additional staff recruitment to maintain 24/7 services for clinical services which lose trainee doctors. • Service delivery and patient safety risks if there is no workforce from which to recruit

		replacements for Junior Doctors
Option 3: Increasing indicative training time to CCT for individual doctors in training	<ul style="list-style-type: none"> • May be an attractive to some Junior Doctors who want more time for experiential learning prior to taking up career grade posts. Recruitment to NHS Scotland training posts may be enhanced • Improved working hours and work/life balance for Junior Doctors training in Scotland 	<ul style="list-style-type: none"> • May not be attractive to some Junior Doctors who want to complete PG training expeditiously and move on to career grade positions. Recruitment to NHS Scotland training posts may be adversely affected • The indicative training time for each PG medical specialty is set by the UK regulatory body – the GMC. There is a high risk that the GMC will not approve training programmes that cannot deliver the full curriculum within the stated indicative training time • The only process for extending training time in the current UK Gold Guide is for the PG Dean to issue an ‘unsatisfactory’ training outcome. Furthermore, the time by which training can be extended is limited to 1 year with a second year only at the discretion of the PG Dean
Option 4: Reducing reliance on Junior Doctors for out of hours acute care provision	<ul style="list-style-type: none"> • Reducing Junior Doctor out of hours commitments has potential to improve daytime delivery of training • Potential to re-establish trainees 	<ul style="list-style-type: none"> • Risk of transferring excessive hours and fatigue risks from Junior Doctors to other staff groups • Lack of trained workforce currently available to provide sufficient cover on

	<p>working and learning in consistent teams</p> <ul style="list-style-type: none"> • Potential to improve service delivery and continuity of care • More senior staff providing frontline out of hours service has potential benefits in delivery of care to acutely unwell patients 	<p>out of hours rotas to reduce Junior Doctor rostering</p> <ul style="list-style-type: none"> • Service delivery and patient safety risks if there is no workforce from which to recruit replacements for Junior Doctors • Cost (potential 30% increase in staffing levels predicted from the pilot study)
<p>Option 5: Reducing 24/7 acute care rotas through service redesign</p>	<ul style="list-style-type: none"> • Fewer 24/7 acute care rotas will enable regional services to increase the numbers of Junior Doctors on each rota, thereby increasing daytime hours for training and service delivery • May be additional economies of scale across other staff groups and out of hours services • Potential to re-establish trainees working and learning in consistent teams • Potential to improve service delivery and continuity of care 	<ul style="list-style-type: none"> • Will have to be bespoke solutions for different specialties and geographies. Will not be workable solution across all 24/7 acute care rotas in NHS Scotland • Requires significant change management projects at Health Board/regional levels and unlikely to be implementable in short term • There may be public and political resistance to service reconfiguration along these lines

Appendix 10: Professional Compliance Analysis Tool

Scottish Government Health Workforce, Leadership and Service Transformation Directorate have developed a quality improvement (QI) framework that examines the working patterns of doctors-in-training: the Professional Compliance Analysis Tool (PCAT). PCAT evaluates the rota templates and the supporting professional environment across three interdependent domains: Patient Safety, Quality of Training and Trainee Health and Wellbeing.

Contractual compliance does not guarantee quality in terms of working patterns or training experiences. A number of recent surveys have shown that poor morale is driving some doctors to leave medicine, influenced by working environments and generational factors as well as wider issues facing the medical profession. Recent UK-wide research found that while Working Time Regulations had improved prolonged excessive hours, fatigue arises not only from hours worked, but also from an unpredictable mixture of shifts, work intensity and inadequate rest. Organisational, professional and cultural drivers also play a part, including the relationship between trainees and seniors. It is important to avoid focusing exclusively on number of hours worked when addressing issues of fatigue and risk among doctors-in-training.

PCAT generates a report based on a qualitative internal survey and examination of rota data. This report is presented at a feedback meeting of the whole team (trainees, training leads and service management leads) to discuss the findings and to establish areas for improvement, ensuring that the improvement plan, accountabilities and timelines are all agreed. The process engages and empowers trainees, allowing them to see real changes being implemented as a direct result of their feedback. This in-depth and specific analysis of an individual department's strengths and opportunities informs QI conversations around working patterns and training experiences that can effect genuine improvement and greatly enhance the experiences of doctors-in-training.. As well as enhancing the health and wellbeing of doctors-in-training we are collecting evidence on additional benefits for departments and Health Boards from participation in the PCAT process.

PCAT is being successfully implemented via a number of different routes. The Royal College of Anaesthetists and Royal College of Surgeons of Edinburgh have endorsed PCAT as a means of improving the health and wellbeing of doctors-in-training. Both these Royal Colleges have committed funding and personnel to support the delivery of PCAT. A number of Health Boards are delivering PCAT through their Directors of Medical Education.

The PCAT tool has been endorsed by NHS Health Board Chairs' Group, the NHS Management Steering Group and by the BMA Junior Doctors Committee. Board Medical and HR Directors and Directors of Medical Education are also supporting this work.

By using the PCAT Framework, Boards will be able to demonstrate that they are actively working to support and improve trainee working patterns using a holistic approach. PCAT also provide assurance around supporting departments and specialties to manage

difficulties with the quality of their training environment or with recruitment and retention issues.

Recommendation

Systematic adoption of PCAT by all Boards can be an immediate action to improve the working patterns as part of the ongoing suite of measures while the 48 hour Expert Group work is underway. The Cabinet Secretary is invited to note progress and approve accelerating roll out of PCAT across all of NHS Scotland.

John Colvin



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