A Self-Rostered Rota for Anaesthetists in Training: Enhancing the Provision of a Tertiary Centre Neuroanaesthesia Service

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King's College Hospital is the regional centre for neurosciences in South East London and Kent. Our interventional neuroradiology department is one of the most established services within the UK, performing approximately 200 mechanical thrombectomy (MT) procedures per year. This service runs from 8am to 8pm seven days a week, with 24/7 cover every other week.

Stage Two anaesthetists in training provide out of hours (OOH) cover for both emergency neurosurgical theatre and neuroradiology suite with Consultant Anaesthetist support, with a requirement for an additional second trainee to cover the neuroradiology suite on weekday nightshifts during alternate weeks when King's College Hospital provides 24/7 MT cover.

Complexities of training rotations, an increasing proportion of Less-Than-Full-Time (LTFT) trainees paired on a single rota line and our uneven service demands has meant that a 1:8 fixed-pattern rota has not provided satisfactory staffing. The appointment of locally employed doctors (LEDs) was considered, though this solution was not deemed financially viable and would have required provision of additional daytime training capacity for those postholders. Electronic rostering, emphasised in numerous national publications, therefore provided an alternative approach.[1]

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After a trainee-led trial, the RotaOnline web-based platform was used to create a self-rostered rota.[2]

This had a multi-user editable master rota interface to ensure that changes in trainee availability and staffing requirements could be instantly and easily adjusted (figure 1).

The platform generated personalised quotas of individual shift types for each trainee, depending on FT/LTFT % and rotation length.

A two-week period was designated for inputting of all shifts and leave requests onto the master rota (with easy export to an individual rota format).

Shift adjustments were strongly encouraged during this period, according to colour-coded gaps and oversubscribed shifts.

This was followed by a College Tutor-led online meeting with all trainees, which effectively reconciled remaining gaps while respecting LTFT days off.

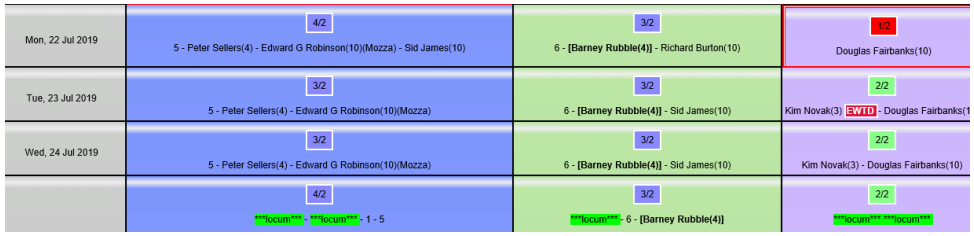

Figure 1. An example of the RotaOnline self-rostering interface, which denotes shifts in a colour-coded format: Green (minimum staffing target met), blue (target exceeded) and red (target not met). Shifts in red therefore denote where gaps in the rota are.

Shifts that are non-compliant with European Working Time Directive and Contract Rules are tagged with the folloing symbol: EWTD

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On a 1:8 fixed-pattern rota (average 9.9 whole time equivalents (WTE); 10.5 trainees) from August 2023-February 2024, **19.0%** of 'thrombectomy weeknights' were covered by two trainees. With self-rostering from February-August 2024 (average 9.8 WTE; 11 trainees) this increased to **64.0%** (figure 2).

All trainees (17/17) considered the RotaOnline platform **technically straightforward** to use, 88.2% (15/17) agreed the process was **fair to all**, and 76.5% (13/17) would **prefer self-rostering** over fixed rota patterns in future.

Leave flexibility, **clear provided instructions** and formation of a **promptly finalised rota** were particularly appreciated. Comments from trainees included:

"I loved being able to design my rota around my other commitments and not having the frustrations of sorting out swaps for exams/holidays."

Drawbacks included **initial lack of warning regarding European Working Time Directive (EWTD) infringements** (quickly rectified), increased administrative **workload**, and **minor technical malfunctions.**

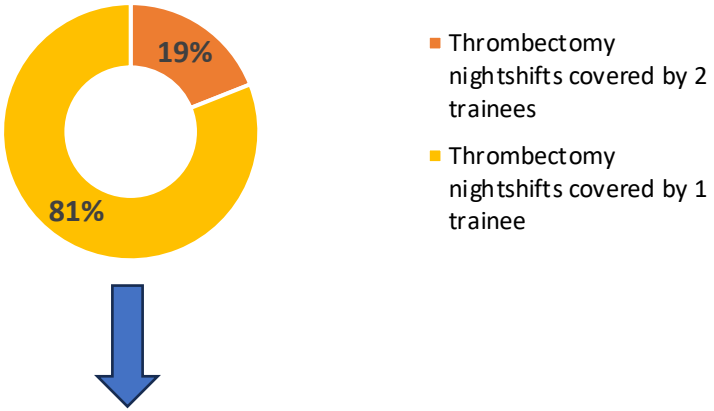
The implementation of a self-rostered rota has increased our on-site cover **threefold** for provision of concurrent time-critical OOH neurosurgical and MT cases.

This **cost-effective approach** (averting additional recruitment of LEDs) utilises our trainees optimally while prioritising **specific skill provision** and **wellbeing.**

The **extension of self-rostering** more widely within our Department is being considered. Doubling-up of trainees on nightshifts on other trainee rotas may further increase MT provision for the remaining 36% of 'thrombectomy nightshifts' covered by one trainee.

We believe that the further development of **flexible working patterns, electronic and artificial-intelligence-facilitated rostering** represents the future of anaesthetics training.

Fixed-pattern rota (Aug 23 – Feb 24)



Self-rostered rota (Feb 24 – Aug 24)

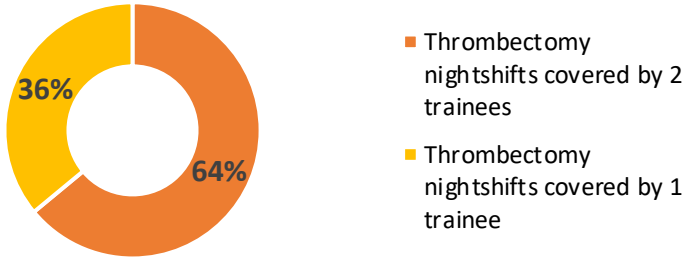


Figure 2. Comparison between the previous fixed-pattern rota (Aug 23 – Feb 24) and new self-rostered rota (Feb 24 - Aug 24) regarding the percentage of 'thrombectomy nightshifts' covered by 1 or 2 trainees.

References:

1. NHS England. NHS Long Term Workforce Plan (2023; updated 22nd April 2024). Available from: https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/ (accessed 24th April 2024)

2. RotaOnline E-Rostering System. Available from: https://rotaonline.com/index.Php (accessed 3rd April 2024)