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Self-rostering to improve paediatric residents' well-being in a tertiary hospital: a quality improvement project

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ABSTRACT

An ideal rota should support training, allow for good work–life balance and ensure safe staffing, as set out in the British Medical Association good rostering guide. We aimed to improve resident well-being and training through a self-rostering approach. An initial pilot scheme, followed by a full-scale roll-out over a 1-year period, was implemented. Serial surveys, informal feedback and analysis of rota data and locum costs were reviewed to assess the success of the project. Post-implementation surveys showed significant improvements in well-being, rest and training opportunities. We demonstrate that self-rostering can improve resident well-being and training while delivering significant financial savings.

An ideal rota should facilitate world-class training and professional development of its staff, allow for a good work–life balance and ensure adequate and safe staffing levels as detailed in the British Medical Association good rostering guide.[1] Poor rotas are intrinsically linked with reduced work satisfaction, poor quality training, increased workplace stress and subsequently resident burnout and attrition.[2] Paediatrics is under the greatest pressure, with an estimated 65% of residents experiencing burn-out.[3] Departments are facing unprecedented pressures with suboptimal staffing, further compounding the problem.[1]

At Bristol Royal Hospital for Children, a tertiary paediatric centre serving the Southwest of England and South Wales, three parallel rolling rotas provide middle-grade staffing across 16 specialties, covering 56 doctors—many of whom work less than full-time (LTFT). We aimed to improve resident well-being and training through a self-rostering approach.

We conducted an initial survey of residents, which identified that seven of the top eight workplace stressors were related to poor rota design and training opportunities (table 1). A proposal was developed to implement self-rostering using an externally funded software (HealthRota).[4] A 6-month pilot began in March 2022 involving 18 doctors (10 whole-time equivalents (WTE)) in one team. Following positive feedback, the approach was expanded to all teams in September 2022. Residents input their shift preferences, which were then reviewed for compliance with contract regulations. The project was assessed through serial surveys, informal feedback and analysis of rota data and locum costs.

Post-implementation surveys showed significant improvements in well-being, rest and work–life balance (table 2). 100% of residents received all annual and study leave requests compared with 27% previously. All responders wanted to continue working in a department that self-rosters.

The flexibility with self-rostering allowed us to release extra hours from the out-of-hours (OOH) rota and to significantly increase the number of normal working days (between 24 and 38 days/registrar/year). A combination of standardising working hours across different grades and clinical fellows, reducing wasted hours and increasing total working hours (from 46.3 to 47.6 hours) facilitated this change. Residents were previously only spending 57.1% of their working hours in hours. With self-rostering, we were able to increase this to 67.1% for general paediatric residents and to 70.1% for subspecialty residents, meeting RCPCH targets.[5] We increased SPA time to 16.5 hours (from 9 hours) per month per resident, meeting training charter targets.[6]

Financial analysis revealed substantial cost savings. By comparing work schedules and salaries before and after self-rostering (adjusted for pay scale changes), we estimated an annual saving of £32 748.60. Further savings arose from reduced reliance on locums—self-rostering eliminated structural gaps caused by LTFT arrangements. When extrapolated, combined savings (including

Table 1 In order of mean ranks of stressors at work as per the registrar survey, with one as the most stressful rank

		Mean rank (1–14)
1	Working in an understaffed environment*	3.59
2	Large volume of work†	4.18
3	Issues with hospital systems—such as IT, equipment	5.36
4	Finishing late†	5.59
5	Shift pattern*	5.73
6	Annual and study leave requests and flexibility with this*	5.95
7	Training and portfolio pressures†	6.7
8	Admin and documentation†	7.38
9	Managing acutely unwell patients	7.78
10	Other healthcare professionals' perception of you	8.19
11	Supporting juniors and managing a team	8.94
12	Other	9
13	Medicolegal aspect of our work	9.5
14	Nature of senior support at work	9.56

*Factors directly related to the rota.
†Factors indirectly related to the rota.

software costs) reached approximately £143 899.50 annually across 30 WTE registrars.

The main challenge was stakeholder engagement, with resistance from consultants, residents and others concerned with the impact on their workload. These concerns were mostly based around misconceptions, and we overcame this with open communication and a desire for honest feedback. Feedback led to process refinements, including reducing to a single self-rostering round and focusing on OOH and leave shifts, making the system more sustainable and reducing the rota team workload. Cost savings also allowed for rota team expansion.

Limitations include declining survey response rates and changes in resident cohorts due to rotations, which limit direct comparisons. However, consistent positive feedback and measurable improvements in rota outcomes support the success of the intervention.

This is, to our knowledge, the largest and most complex rota group transitioned to self-rostering in the UK. We demonstrate that self-rostering is a feasible and impactful solution, improving resident well-being and training while delivering significant financial savings. Our experience offers a replicable model for other departments

Table 2 Percentage of responders who agreed to the statements across the intervention period

Question	% agree prior to any intervention	% agree after pilot	% agree after full implementation
The rota allows a good work–life balance	45.46	88.50	96.15
I think self-rostering will significantly improve my well-being	N/A	75.00	92.31
There is enough flexibility in the rota to have my annual and study leave	27.27	87.50	100
I think self-rostering is a fairer way of allocating shifts	N/A	69	92
Rota allows you to space out your shifts to have adequate rest between them	59.09	87.50	96.15
I would prefer to work within a department which self-rosters in the future	N/A	75	100

to consider in addressing burnout and workforce challenges in paediatrics and beyond.

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