

Self-rostering in paediatrics

Introduction

Effective rostering is fundamental to achieving both high-quality paediatric service and staff well-being. It requires a balance between allocating shifts that provide adequate staffing levels and expertise, while accommodating staff needs and remaining intrinsically flexible. Well-documented pressure on staffing following the pandemic and the cost-of-living crises alongside rising waiting lists, rota gaps and congruent changes in complexity of care mean that rostering is more challenging than ever before. In this document, we describe the ways in which electronic-based self-rostering (e-rostering) can be an effective alternative to manual rostering in turn, prioritising staff wellbeing while accounting for both service and staff requirements plus mandatory regulations, all in a timely fashion.

Rota planning has traditionally fallen on the shoulders of individual staff members who have been required to allocate shifts as they deem appropriate, juggling service requirements, staff requests and regulatory conditions – all as part of a manual process. Given the challenge this entails, solutions have been proffered that look to simplify and improve the rostering process leading to a move towards e-rostering. E-rostering algorithms can incorporate both staff preferences such as annual leave, alongside service requirements e.g. minimal staffing in addition to mandatory regulations using partially or fully automated processes. Electronic self-rostering is currently being trialled in a number of units across the UK using both a manual-automated hybrid, which requires some human user manipulation and a purely algorithmic approach. Here, we take a look at the background and evolution of self-rostering with a focus on hybrid and fully-automated methods presenting an example of two new platforms designed to improve the rostering process.

E-rostering background

Traditional rostering in the NHS has generally been a fully manual process that requires significant involvement from HR teams, managers and supervisors. Those performing this task are required to keep track of all necessary service requirements, regulations and mandatory service-based compliance, whilst also trying to ensure that staff requests regarding leave and shift patterns are fulfilled equitably. However, in addition to service provision, staff wellbeing should remain a priority when compiling a roster. This means that study leave requests should be honoured while annual leave and work pattern requests should similarly be permitted where possible. This is particularly relevant with the rapid increase in flexible working with 40%

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Fig 1. Example of a Rolling Rota (courtesy of Karthik Darma)

Table 4: Feedback from trainees. Total N = 12							
	Strongly agree	Agree	Strongly disagree	Neither agree nor disagree	Disagree	No response	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
allows a good work/life balance	8 (66)	4 (33)	0 (0)	0 (0)	0 (0)	0 (0)	A self-rostering rota allows a good work/life balance
will significantly improve my wellbeing	8 (66)	4 (33)	0 (0)	0 (0)	0 (0)	0 (0)	I think self-rostering will significantly improve my wellbeing
There is enough flexibility in the self-rostering rota to have the annual and student leave I want	8 (66)	4 (33)	0 (0)	0 (0)	0 (0)	0 (0)	There is enough flexibility in the self-rostering rota to have the annual and student leave I want
I would prefer to work within a department which self-rosters	3 (25)	4 (33)	0 (0)	0 (0)	1 (8)	5 (42)	I would prefer to work within a department which self-rosters
I think I am more likely to pick up locum shifts with a self-rostered rota	5 (42)	2 (16)	0 (0)	0 (0)	0 (0)	5 (42)	I think I am more likely to pick up locum shifts with a self-rostered rota
I think self-rostering enables me to access more educational opportunities on my specialty	5 (42)	2 (16)	0 (0)	0 (0)	0 (0)	5 (42)	I think self-rostering enables me to access more educational opportunities on my specialty

Fig 2. Survey results (courtesy of Karthik Darma)

AI-Based: InGenius

InGenius is a fully-automated software working within an AI framework and recommended by the government website as not just an e-rostering platform but also for staff bank management. Being AI-powered, it allows both clinician preferences and regulatory requirements to be easily incorporated and the cloud-based framework means that information is easily accessible including by smartphone.

We have discussed the advantages of e-rostering in depth, but a fully automated system can also avoid any shift allocation preference bias based on 'first come first served' and avoid the risk of the least desirable slots being the hardest to fill, offering solutions where rotas are short-staffed or with high proportions of flexible working staff. Fully automated approaches balance between rotas and staff. A fully automated approach has the advantage that it creates the optimal shifts for each staff member on an individual basis while accounting for departmental requirements including minimum staffing levels and skill mix alongside staffing requirements such as training needs, SPA time and working pattern preferences. As with other new software, InGenius is currently being piloted in a number of units across the UK and early reports suggest reductions in temporary staffing requirements with over 90% of leave requests accommodated.

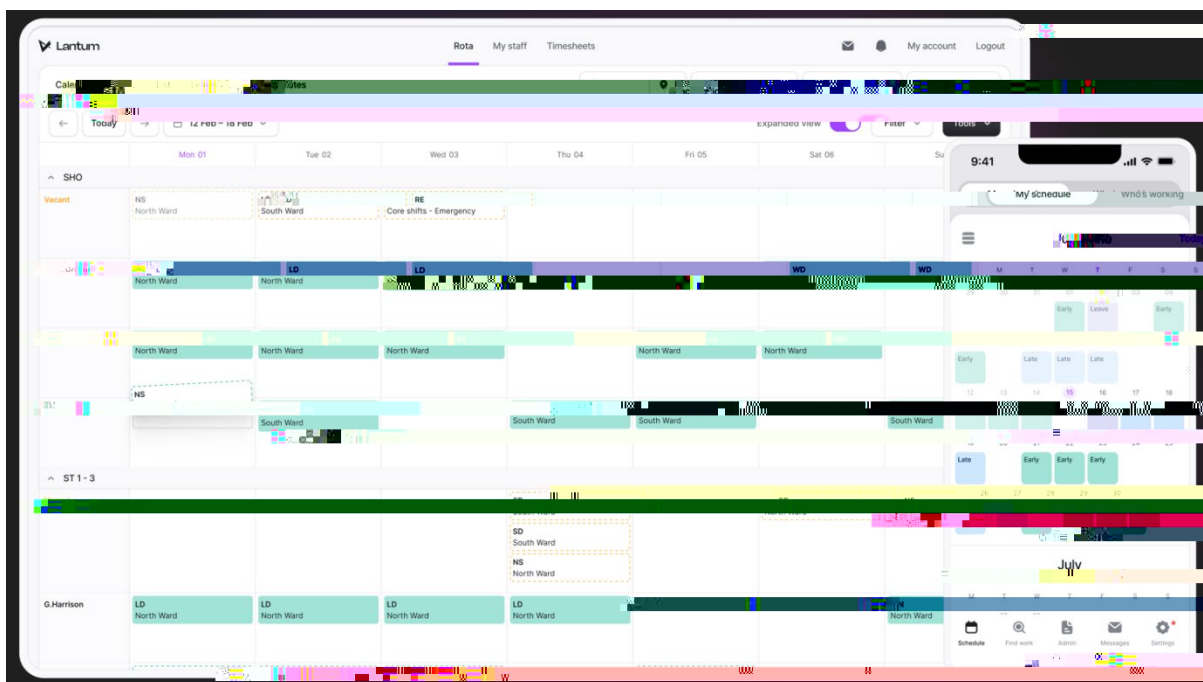


Fig 3. Example of a rota using InGenius rostering (courtesy of Lantum)

Conclusion

While e-rostering is in its relative infancy, there are a set of proven advantages that suggest that it should be embraced within paediatric rota planning. Not only can it reduce time spent in creating increasingly complex rotas, but the implementation of e-rostering could improve training opportunities, support wellbeing and optimise staffing levels while providing an appropriate skill mix.
