

Practice review

## A novel approach to Foundation Doctor Year 1 workforce planning

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### Abstract

In early 2020, North Manchester General Hospital took steps to increase the number of doctors providing out-of-hours cover in response to the COVID-19 pandemic. This included introducing higher intensity rota patterns. Following positive feedback, it was decided that maintaining an increased level of staffing at Foundation Year 1 level across the site was beneficial for both patient safety and junior doctor working conditions. To maintain higher levels of out-of-hours cover by foundation year 1 doctors without an unmanageable financial impact on the trust, while complying with workforce regulations, a new workplan was designed. In this model, Foundation Year 1 doctors work across multiple areas when providing out-of-hours cover, across medicine, surgery, urology and trauma and orthopaedics, rather than staying in their own current parent department. This whole-site model spanned the full 52-week period of foundation year. In addition to increasing staffing numbers, this structure was also designed to provide Foundation Year 1 doctors with more stability in their rota pattern and monthly income, while improving their ability to prospectively plan their personal lives. The new model led to 20% additional cover during weekday evenings, 50% additional cover during nights and 60% additional cover on weekend daytimes, at an additional cost of £61 383 per year to the trust, excluding on costs. Foundation Year 1 doctors reported that this model gave them educational opportunities and allowed them to take more breaks. This article describes this model, its implementation, key considerations and the potential to expand it across other NHS trusts.

### Key words

Foundation doctor; Junior doctor; Leadership; Out-of-hours; Transformation; Workforce planning

### Introduction

On leaving medical school, UK doctors begin their career in the UK Foundation Programme (UKFPO). This is split into two academic years: Foundation Year 1 and Foundation Year 2. According to the General Medical Council (GMC), there were 15,647 Foundation Doctors, split across Foundation Year 1 and Foundation Year 2, practicing in 2021, representing a substantial part of the medical workforce (General Medical Council, 2022). These posts are rotational, with doctors changing departments and specialties every 4 months.

The short nature of placements can lead to challenges in team building, orientating to the specific skills of the department or specialty and adjusting to different working patterns. Because of this, during changeover periods it is not unusual for FY1 doctors to cover medicine overnight one

day, before transitioning to covering surgical specialties the next day. While changing departments does facilitate exposure to many specialties, it can also lead to poor learning experiences because of limited rapport with senior clinicians, high amounts of uncertainty regarding working patterns and clinical skills and patient safety concerns, with noted lapses in patient safety during handover periods (Gaskell et al, 2016).

Furthermore, different specialties have different rostering patterns. For example, surgical and medical specialties typically schedule FY1 doctors to work overnight and over the weekend, while other specialties, such as paediatrics and psychiatry, tend to limit work to weekdays. Despite contractual stipulations that FY1 doctors should receive specific individual rotas at least 6 weeks before beginning a placement, this deadline is frequently missed, leaving early-career doctors with high levels of uncertainty and challenges in planning their personal and professional lives.

This report describes the development of a novel approach to FY1 doctor workforce planning at North Manchester General Hospital, with the aim of evaluating the implementation and impact of changes to FY1 working in the acute setting. Ethical approval was not required as this is review and evaluation of services, with no potential risk or harm identified in the gathering of data associated with reviewing and evaluating service changes.

## Context

North Manchester General Hospital is a medium-sized district general hospital that services the resident population of a socioeconomically deprived area in North Manchester. It offers primary, secondary and tertiary services, with a high volume of acute general medical and surgical patients. A broad range of specialties are represented in both inpatient and outpatient services, including infectious diseases, intensive care medicine, emergency medicine, trauma and orthopaedics, maxillofacial surgery and breast surgery. In 2019, the site had around 481 acute beds, but this fluctuated significantly during the COVID-19 pandemic. At the time of this study, the hospital had 37 FY1 doctors.

Before the pandemic, feedback from the National Training Survey, as well as local quality improvement initiatives, suggested that the model of out-of-hours working at the hospital was sub-optimal (General Medical Council, 2020), with unmanageable workloads for medical staff, poor teamworking and poor support structures for junior staff. A survey of junior doctors at North Manchester General Hospital found that only 4.4% were always able to take their full break entitlement, with poor staffing levels being the main barrier (Home, 2020). During the early stages of the COVID-19 pandemic, the out-of-hours model was overhauled, with foundation year 1 and foundation year 2 doctors moving from 'silo' working, whereby each junior doctor provided out-of-hours cover exclusively in their own daytime specialty, to providing whole-site out-of-hours cover. In this model, junior doctors became responsible en-masse for providing patient care across clinical areas and specialties, regardless of their parent specialty. The aim of this was to allow junior doctors to respond flexibly to service pressure points in the trust, ensure parity of workload across the out-of-hours team and improve multidisciplinary working between traditionally separate departments, such as medicine and general surgery.

As well as changing the out-of-hours workforce model, the number of doctors at each level was increased. This was achieved via a large-scale redeployment of junior medical staff and a temporary relaxation of national rostering regulations (NHS Employers, 2020). However, these temporary changes to rostering were redacted at the beginning of August 2020, with all rota patterns now being required to be compliant with the standard national terms and conditions of service, as defined in the 2016 national junior doctor contract (NHS Employers, 2020).

Feedback gained from foundation year 1 doctors about the changes made to the out-of-hours model in the early stages of the pandemic suggested that they felt the whole-site model of working, in tandem with the increased number of doctors, meant that their out-of-hours shifts had higher educational value, with better patient safety and staff wellbeing (Home, 2020). Therefore, management teams at the hospital wanted to ensure that these positive changes were preserved after the acute stages of the pandemic. However, maintaining these high levels of staffing while working within the constraints of the 2016 terms and conditions of service presented a challenge.

With this in mind, a novel approach to foundation year 1 workforce planning was required. The aims of the model were:

- Increase out-of-hours foundation year 1 doctor cover 24 hours a day, 7 days a week, while maintaining a rota pattern that is compliant with the 2016 national junior doctor contract’s terms and conditions of service
- Flexibly cover the out-of-hours needs of the site by providing a ‘generalist foundation year 1’ service.
- Mitigate the need for escalation or de-escalation of foundation year 1 rotas in the event of future surges in service demand.

### The whole-site, whole-year model

Before the pandemic, doctors at North Manchester General Hospital rotated through three different departments during foundation year 1. Each department operated a different rota pattern, with subsequent changes in salary during each placement. This not only impacted doctors’ pay, but also their ability to plan their personal lives more than 4 months in advance. This was a source of stress for trainees at North Manchester General Hospital, with anecdotal reports of trainees resorting to taking sick leave when annual leave applications for significant life events, such as weddings, were not approved despite significant notice.

For the vast majority of foundation year 1 doctors based at the hospital, one placement out of three was without any out-of-hours responsibilities; these took place in paediatrics, obstetrics and gynaecology, psychiatry and anaesthetics. During these rotations, there is no out-of-hours supplement to the trainee salary, resulting in a substantive pay reduction as compared to the other two rotations.

In order to increase staffing, while working within the constraints of the 2016 terms and conditions of service, a year-long rota pattern was designed for foundation year 1 doctors. In this model, each foundation year 1 doctor is allocated a ‘track’ on the rota, which they remain on for the entirety of foundation year 1. They continue to rotate between placements at 4-monthly intervals, but are responsible for out-of-hours provision for the whole hospital site. This model allows the out-of-hours burden to be shared across all three rotations in foundation year 1. For example, trainees on their paediatric rotation (which previously had no out-of-hours shifts) now participate in the whole-site general out-of-hours cover. The aim of this was to provide experience and confidence for foundation year 1 doctors across specialties, reducing potential stress associated with placement transition. This workplan was designed to give foundation year 1 doctors a stable rota pattern and salary for the duration of the year, so that they can plan their lives and finances with more certainty.

Table 1. ?Table showing changes in medical cover from old pattern to new pattern.

	FY1 OOH cover pre-COVID (No. of	FY1 OOH cover in new model (No. of	Increase (%)

	doctors covering unit)	doctors covering unit)	
Week-day evenings 16:00 – 20:30	5	6	+20%
Nights 20:00 – 08:30	2	3	+50%
Weekend days 08:00 – 20:30	5	8	+60%

As seen in Table 1, the new model provided additional numbers of doctors available out-of-hours with the aim of improving patient safety and reducing work burden of doctors supporting services.

### Identification of stakeholders

When attempting any transformational change, it is imperative to identify and engage key stakeholders (Kotter, 2012). In medical training, there are many interacting and sometimes opposing perspectives.

### Foundation year 1 doctors

The foundation year 1 doctors were at the centre of this change. The primary motivation of the initiative was to increase foundation year 1 cover across the site, to create a more sustainable working and learning environment for this staff group.

Formal and informal feedback was gathered from existing foundation year 1 doctors via online surveys, email and face-to-face meetings.

Incoming foundation year 1 doctors were also consulted on the proposed changes by virtual teams meetings conducted via Microsoft Teams. The circumstances of 2020 meant that several of the incoming foundation year 1 doctors started at the trust early, which allowed the trust to meet and consult with them in person before the standard initiation of foundation year 1 in August. Once the foundation school had confirmed the details of the remaining incoming foundation year 1 doctors for August 2020 changeover, these doctors were invited to attend virtual meetings to offer their insights on the proposal.

### Health Education North West

The postgraduate deanery, Health Education North West, has oversight of all training programmes in the North West of England, so deanery approval was required before any changes could be implemented. Survey data gathered from the existing cohort of foundation year 1 doctors was used in conjunction with data from the National Training Survey (GMC, 2020), to outline potential benefits of the proposed changes for trainee wellbeing and education. In line with recommendations made in Health Education England's (2020) *Foundation Programme Review*, the proposal recognized that it can be channeling for foundation doctors to take breaks, and the deanery was supportive of measures to facilitate the safe taking of breaks when working out of hours. The deanery is also responsible for ensuring that all foundation year 1 doctors achieve the outcomes set by the General Medical Council before progressing to foundation year 2. As these outcomes are not specialty-specific, the proposed

changes were not expected to detrimentally affect the progression of foundation year 1 doctors. The senior leadership team at Health Education North West was consulted and were supportive of new model.

### **Operational directorates**

While the hospital as a whole benefitted from increased out-of-hours cover, departments where foundation year 1 had historically had no out-of-hours responsibilities saw a reduction in cover during the normal working day because of the compensatory zero (non-working) days mandated by shift working patterns. It was calculated that, for each doctor, only 60% of their time would be spent on their base ward. This particularly impacted paediatric services. To mitigate this problem, additional foundation year 1 tracks were allocated to short-staffed departments, increasing the staffing on standard days.

### **Trust leadership team**

Following financial analysis, a business case was proposed to the trust executive team, who approved the new model and associated funding requirements. The team recognized the substantial problems associated with medical workforce burnout and challenges in recruitment and retention, and the potential of this initiative to help mitigate these issues. Senior support of the project helped to alleviate challenges in brokering relationships between departments with different priorities, ensuring that all stakeholders were both able and willing to release FY1 doctors from 'day' duties to support the hospital's emergency teams.

### **Implementation**

To minimise disruption, it was agreed the new model of working would be introduced in line with the August junior doctor changeover. This allowed incoming foundation year 1 doctors to start on the new pattern, avoiding transitioning between rota patterns.

Typically, small-scale pilots are used to stress-test organisational changes in NHS trusts. However, in this case, implementing the whole-site, whole-year rota required the whole organisation to change at the same time. This required significant planning with rota teams, clinical and non-clinical managers, finance teams and educational supervisors across the organisation in advance of the changeover date. Any concerns or queries about the new system were discussed in advance, with scenario planning conducted with current clinical teams to identify and mitigate for potential challenges which could later lead to patient or staff safety concerns. Crucial to this process was support from the medical director team, who sponsored the project and ensured that appropriate resources were allocated during the planning and implementation phase.

### **Financial analysis**

Foundation year 1 doctors in England are paid on nodal point 1 of the national pay scale, according to the 2016 contract. At the time of original drafting of this article (2020), this equated to a base salary of £27 679 per year before any out-of-hours supplements ([British Medical Association, 2021](#)). The required out-of-hours supplement is dependent on the frequency of weekends, nights and average weekly hours in a rota pattern. The authors used the *DRS4* rostering software platform (<https://www.skillsforhealth.org.uk/rostering-login/>) to construct the whole-year rota pattern and calculate the out-of-hours supplementation associated with the rota.

There are 37 budgeted foundation year 1 posts at the hospital. According to internal workforce data, the average out-of-hours supplement per foundation year 1 doctor was £5 275, giving a gross salary of £32 964 in the 2019–20 fiscal year (before implementation of COVID-19

specific rotas). Under the new whole-year pattern, the gross annual salary was calculated at £34 623 across the year, representing a salary increase of £1659 per foundation year 1 doctor.

When this new model was implemented, the funding of salaries for doctors in training were supplemented by Health Education England at a flat rate per trainee (Gov.uk, 2020). Therefore, any additional costs associated with increasing out-of-hours work must be provided from the host organisation's budget. Therefore, the total additional annual cost to the trust was £61 383 per year across the foundation year 1 cohort, excluding on-costs. This represents a 20%, 50% and 60% increase in foundation year 1 cover on weekday evenings, nights and weekends respectively. It should be noted that these costs were calculated at the time that the business plan was drafted; junior doctors have received year-on-year 2% pay increases since then, therefore exact figures may have changed (NHS Employers, 2019).

Table 2. Table demonstrating difference in FY1 salary across different rota patterns. Data taken from internal trust records.

	Base FY1 salary 19/20 FY	Average OOH supplementation per FY1 Doctor 19/20 FY	Average OOH supplementation per FY1 Doctor with new pattern	Average gross salary of FY1 Doctor pre-COVID-19 rota pattern	Gross annual salary of FY1 Doctor within new pattern	Additional annual cost (excluding on-costs)
Per FY1	<b>£27 689</b>	<b>£5 275</b>	<b>£6 934</b>	<b>£32 964</b>	<b>£34 623</b>	<b>£1 659</b>
Total for 37 FY1's	<b>£1 024 493</b>	<b>£195 175</b>	<b>£256 558</b>	<b>£1 219 668</b>	<b>£1 281 051</b>	<b>£61 383</b>

Increased cost pressures were appropriately questioned by finance and executive teams, however concerns were alleviated due to the projected reduced reliance on locum staff with an associated high hourly rate.

### Benefits to foundation year doctors and the wider trust

It is difficult to compare foundation doctor experiences across different cohorts, particularly because of the continued disruption secondary to the COVID-19 pandemic. However, data collected from an online survey conducted 2 months after the model was implemented in August 2020 suggested that the foundation year 1 doctors experienced tangible benefits in terms of peer-support mechanisms and workload.

Doctors also reported feeling more able to take breaks, as well as benefits to morale and wellbeing from knowing their work pattern for the full year in advance. Additionally, the model meant that the hospital did not need to alter rota patterns for foundation year 1 doctors to cope with the second and third waves of the COVID-19 pandemic in late 2020 and 2021, as the model had already ensured increased perspective cover.

### Potential disadvantages and mitigation

During the consultation and planning period, it was raised that there could be potential patient safety concerns relating to foundation year 1 doctors clinically assessing patients. For example, if an foundation year 1 doctor without previous experience in a surgical setting was called to an unstable patient on a surgical ward, they may not have the appropriate expertise to assess the patient and



create a plan. On discussion with the clinical director team and Health Education England, it was recognised that foundation year 1 doctors' roles and responsibilities should remain constant when assessing an unwell patient, regardless of the specialty. This should include; core clinical skills including basic life support and intravenous access; and appropriate escalation to level two or level three doctors in the relevant specialty.

There were additional concerns relating to loss of normal working days in foundation year 1 doctors' parent specialties, which could result in reduced training time. This was due to FY1's being removed from normal day duties in specialties, such as paediatrics, for a portion of their time to support the general whole-site OOH rota. Furthermore, associated non-working days, known as 'zero days' following OOH periods, reduced the number of normal working days in parent specialties further. This was particularly noticeable in specialties such as paediatrics, which previously featured no OOH responsibilities. However, following feedback with foundation doctors and senior clinicians, this was felt to be a reasonable compromise because of the reduced intensity of on-call period, improvements in patient safety from higher numbers of foundation year 1 doctors on-call, and improved parity across specialties in terms of on-call burden and take-home salary.

## **Spread and scale**

The COVID-19 pandemic presented a key opportunity for organisation-wide change at North Manchester General Hospital. Sponsorship from the senior leadership team was required to broker and mediate often conflicting priorities between different parties and departments to enable change to be implemented in a timely and safe manner. While these specific conditions may be difficult to replicate in other NHS organisations, the problem of short 4-monthly rotations for foundation year 1 doctors, with limited scope to plan their personal lives from a rostering and financial perspective, persists across many NHS organisations. Many trusts and doctors could benefit from a whole-year, whole-site generalist foundation year 1 model, with appropriate alterations made according to the organisation's specific circumstances. However, it should be noted that trusts in which doctors rotate across organisations and employees during the foundation year 1 year may struggle to implement this model, as the change in employer (and, therefore, funding) may create additional barriers.

## **Limitations**

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Whilst this report does suggest novel methods and approaches to Foundation Doctor ways of working can improve patient safety, junior doctor workload and junior doctors ability to plan their personal lives, it should be noted that this project was conducted in a single district general hospital and therefore may not be possible to trial in other settings. Furthermore, the project was initiated during the Covid-19 pandemic which provided healthcare organisations increased flexibility to deploy their workforce as necessary to maintain clinical services under immense pressure.

As this project was initiated in 2020, it would be useful to review both the process and the outcomes following the period after implementation. Furthermore, additional pilot's in similar sites may provide additional information in demonstrating where this model can be beneficial to healthcare delivery.

## **Conclusions**

The COVID-19 pandemic forced healthcare providers to deploy innovative ideas in response to service pressures. At North Manchester General Hospital, it was clear that some of these new ways of working were beneficial, both to plan for future surges in demand and to improve trainee experience and patient safety in normal times. Taking a novel approach to the structure of the

foundation year 1 year has allowed staffing levels to be increased and led to a better training experience for junior doctors, without unmanageable financial investment from the organisation.

Many NHS organisations continue to use 4-monthly rotations with different rota patterns for foundation year 1 doctors, leading to instability in the ability of these individuals to plan their personal and professional lives. This change to workforce planning may help to improve the working lives of doctors at foundation year 1 level. Although it may not be possible to implement a whole-site, whole-year pattern at some NHS trusts because of differences in organisational structure, departmental relationships and priorities, this model can offer a cost-effective means of improving patient care and staff experience

### **Key points**

- Novel approaches to workforce design could offer cost-effective solutions to staffing levels.
- Increased out-of-hours medical cover was found to improve the educational experiences of foundation year 1 doctors.
- Providing foundation year 1 doctors with their rota pattern for a full year in advance can allow them to better plan their personal lives, as well as leading to improved financial stability.
- In this case, prospective planning for future surges in service demand removed the requirement to further escalate foundation year 1 doctors' working patterns during the second and third waves of the COVID-19 pandemic.

### **Conflicts of interests**

The authors declare that there are no conflicts of interest.

### **Declaration of funding**

None.

### **Data sharing statement**

All data are available from the corresponding author on reasonable request.

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