



# Improving Rostering and Scheduling within the NHS

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# EFFECTIVE MULTI RESOURCE SCHEDULING FOR THE NHS TO AID ELECTIVE CARE RECOVERY



## ISSUES FACING THE NHS

### OVERVIEW

The Carter review (2019) identified the potential for considerable savings across the NHS through better management of the planning, deployment and use of clinical staff. The report says the way that NHS trusts roster their staff is very inefficient. By reducing the variation in staff planning and deployment, through the best practice use of digital tools such as e-job planning and e-rostering, trusts will be able to optimise their clinical workforce deployment and reduce their dependency on bank and agency staff.

There is now a huge pressure on the NHS created as people are now living longer and there is an increased demand for Healthcare. In addition to this the Covid 19 pandemic has created a huge backlog in the provision of Elective Care. There is a need for Trusts to consider how they are going to address this Elective Care Recovery. Trusts need to be able to have a clear understanding of the demand that is required in order to be able address the backlog in procedures. This needs to be combined with clear knowledge of both the staffing and physical resources that are available to them. Trusts need to have systems in place to allow them to manage staff competencies and demand in a single system.

According to NHS Improvement, over 291,000 more routine operations could be carried out per year by improving the scheduling of surgical lists. Variation in theatre productivity between different trusts and different specialities was demonstrated including late starts, early finishes and delays between operations.

The time lost to these could have potentially been used to do up to 291,327 more operations which represents a 16.8% increase. COVID-19 has caused a significant reduction in planned operations and appointments, with a lower percentage of patients treated within 18 weeks than at any time since June 2008. There is a backlog of operations and hidden patients, yet to be added to the list because referrals have been at their lowest recorded level.

Today, many NHS Trusts have Rostering solutions in place for their staff, however they still struggle to ensure they optimise the use of staff and physical locations available to them. This is vital when trying to improve your Elective Care Recovery and safely reduce the numbers of patients on waiting lists. Maximising the use of location and resources will not only make the treatment of patients more efficient but will optimise the use of expensive resources. In order to achieve this Trusts, need to have a view of the staff available to cover shifts and their competencies. Trusts would ideally like to have a solution that is responsive to patient demand. The system would show staff/room/equipment availability and then automatically plan the best use of staff and resources based on the actual demand.

A key issue with the successful deployment of rostering solutions is the need to integrate and gather information from several disparate systems. Capturing the information in one system to provide a single source of the truth, would enable Trusts to maximise the use of staffing and physical resources to be able to reduce waiting time lists down. The ability to be able to configure a rostering solution to the differing requirements for Trusts is also important. All Trusts have their own unique ways of working and require the ability to be

*Trusts need to have a clear understanding of the treatment demand*

*How people are planned and deployed is critical to delivering sustainable services*



able to configure a rostering solution to meet their requirements. This includes having the ability to produce customizable reports in allow managers to report and monitor their KPI's.

Typically, the workforce accounts for the largest part of an organisations budget, so how people are planned and deployed is critical to delivering sustainable services. Being able to access the information on staff allows managers to have better insights on budgets, safety and staff experience. The ability to view this data means they can carefully match staffing to demand. Reports can be generated to allow managers to monitor universal KPI's such as accurate knowledge of referral treatment waiting times and diagnostic waiting times. All this information will enable Trusts to ensure they can meet their quality and performance KPI's.

Having a more comprehensive view of staff available to be rostered to treatment pathways gives Trusts more control over unbudgeted spend. An early view of unavailable days when staff cannot be rostered because of annual leave, study days, management days and sickness absence, allows Trusts to offer these shifts to Bank staff rather than Agencies.

Using automated rules to identify staff to complete shifts and be rostered to roles, makes the process more efficient allowing roster managers more time to fulfil their clinical duties. A comprehensive e-rostering system will allow rules to be used to ensure that staff do not exceed contracted hours and there is fair and safe allocation of shifts. Providing clinical staff with early visibility of their rosters and shifts allows them to have more control over their working lives. This will aid staff motivation and retention.

A study by KPMG in December 2020 found that the workforce shortage is the greatest challenge facing the health and care sector in the UK today. There are many reasons behind that, but a key factor was the rostering and planning of the workforce. Aligned to this, The NHS People Plan, published earlier that year, sees a much greater role for systems in workforce planning in future. At present however, many if not all, know little about the true number of staff they need, the skill mix required, and importantly, have no reliable means of modelling this. Workforce plans historically are very static and need to become far more dynamic. Being able to see the demand for treating patients and being able to react to sudden changes.

Another issue identified was that systems do not currently plan across health and care. Even though work in these sectors overlaps and there is an increased need to deliver more treatments/care in the community. The boundaries between them are notoriously blurred and better planning would deliver better outcomes by reducing the competition for talent. Better co-ordination between NHS Trusts and the Care Providers could offer staff far more opportunity to pursue diverse and fulfilling careers across both sectors and reduce the high turnover of staff. To achieve this then it is important that the ICS's have systems in place that can capture information from a wide range of sources. Then they need to be able to use that single source of the truth to make the rostering of staff more efficient and improve the patient experience throughout their treatment pathway. Being able to identify areas where care can be delivered in the community would reduce the number of patients that need to attend hospital. This can increase the capacity in the wards and allow Trusts to deliver more elective procedures.

*Trusts need to have a single source of the truth to make rostering more efficient*

## **WHAT IS THE CONSEQUENCE OF NOT ADDRESSING IT?**

An inquiry commissioned by the House of Commons Health and Social Care Committee<sup>1</sup> found that staff shortages were ultimately the biggest driver of workforce burnout. Low energy or exhaustion created negative feelings and reduced professional effectiveness.

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<sup>1</sup> House of Commons Health and Social Care Committee. Workforce burnout and resilience in the NHS and social care: second report of session 2021-22. 8 Jun 2021. <https://committees.parliament.uk/work/494/workforce-burnout-and-resilience-in-the-nhs-and-social-care>.

Excessive workload was identified as the key predictor of staff stress and workers' intentions to quit, of patient dissatisfaction, and was highly associated with the level of errors.

Workforce planning was identified as a key area that was putting unacceptable pressure on staff. The report found that dealing with the backlog of patients awaiting treatment was not going to be possible without addressing this. There needs to be a clear view of the skills that staff possess across both Health and Care and an understanding of the backlog of treatments required. This clearly needs to identify the shortage in available medical specialists and whether enough numbers were being trained to address the gaps. The report concludes that to address this there needs to be a complete overhaul of workforce planning. If there was not enough investment in the required numbers of doctors, nurses and other clinicians being trained, then this will lead to not just more burnout but more expenditure on locum doctors and agency nurses. This will increase the pressure on already stretched funding within the NHS.

*Workforce planning was identified as a key area that was putting unacceptable pressure on staff.*

In addition to these staff shortages Covid19 has led to an unprecedented growth in waiting lists for Elective Care. Prior to the pandemic the numbers rose from around 3.5 million in 2016 to around 4.3 million in 2019. The figures now stand at over 5.6 million, which is likely to be underestimated due to people not presenting for diagnosis due to Covid19. To start addressing this the NHS have to ensure they have the right levels of staff with the right skills to be able to manage the demand.

CACI can help to enrich your strategic workforce planning and maximise space utilisation to aid Elective Care Recovery. Using demand allocation rules means that treatment can be scheduled automatically in advance based on the availability of staff and resources. An optimal schedule will be produced based on the availability of staff with the relevant skills and rooms/locations being available with the required equipment to deliver the treatments. In addition, the Trust will be able to easily see where there are gaps in staff availability and whether these can be filled by using bank staff or needing to consider agency staff. By recording staff competencies in the system Trusts will also be able to see the experience staff have had previously of working in other departments. Where applicable these staff could be diverted to areas that are being overwhelmed and under resourced. The advantage being this will allow Trusts to estimate in advance the resources needed and reduce agency spend.

Trusts need to build more flexibility into rosters to improve staff morale. Where a system can easily identify the skills of staff it is easier to cover sickness absences and enable staff to have more breaks in a workday. Leading to a more manageable workload and a better work-life balance. Systems need to be more user friendly and allow access to staff themselves giving them more control over the hours they work and shifts they choose.

*Trusts need to be more flexible with rosters to improve staff morale*

To take pressure off the hospitals, there needs to be closer collaboration and transparency of data and staff skills across both health and care. If this is not achieved, then the NHS will not be able to manage the need to deliver more care in the community. Doing this will take the pressure off the NHS Trusts and hospitals meaning that the Hospitals can start to deliver more elective surgery treatments. This is required to reduce the ever-increasing waiting lists for patients. Patient health will suffer if this is not addressed.

## **WHAT IS THE LEVEL OF INTERVENTION REQUIRED?**

The key operational change that will need to take place will be for roster managers to roster staff well in advance based on the ability to identify the demand for Elective procedures. To be able to realise the maximum benefits from the solution roster managers will have to roster both nurses, consultants and resources in a single solution. Roster managers will need to assign and approve rosters early to ensure there is a balance of fairness and sustainability. Planning the rosters in advance will also allow clinical staff to have more control over when they work and that shifts are transparent and consistent.

Across NHS Trusts there tends to be many disparate systems managing different departments and staffing levels. There is no single source of the truth nor the ability to



manage different types of staff contract in a single solution. There currently are several rostering solutions on the market that are good for rostering nurses that are on fixed shifts, but they lack the ability to be able to allow variations in pay and be configured to the unique requirements of individual trusts. Current systems as well do not have the capability of being able to handle fixed term contracts. So, when doctors or consultants have contracts that are based on the delivery of a certain number of procedures during a period, there is no way of controlling or reporting on that. There is also a lack of ability to see areas within a Trust that staff have historically worked in, this is useful when certain areas of a hospital is overwhelmed by demand.

Trusts need to have a solution in place that allows for user defined business rules to be set up. These can then be configured to match the unique variations between staff contracts and interface with payroll systems to ensure that staff are paid accurately without a lot of manual intervention. Trusts also need a solution that provides the ability to store information relating to procedures and create templates of forms so that information relating to a procedure can be easily captured and stored online. This would enable reports to be generated around the delivery of the procedures. This includes being able to capture information on who carried out a procedure. Therefore, a Trust could easily identify the number and type of procedures a consultant has carried out and compare that to the KPI's in their contract.

Planning the rosters in advance will also allow managers to be able to carefully match staffing to demand. This will allow managers to identify where areas are under or over staffed. Also, the ability to record staff competencies in the system is highly beneficial. This would mean managers could easily identify staff that have previously work in a particular area or have certain skills that can be utilised in other areas. This will allow shifts to be offered to bank staff and not rely so much on expensive agency staff. Patients will benefit from Trusts being able to identify staff competencies and allocate them more efficiently, as the system will allow Trusts to maximise the use of staff to deliver treatment pathways. The system will also allow managers to be able to react to last minute changes reducing the need to cancel appointments, by identifying alternative resources to provide cover.

Additional benefits could be gained across the Health and Care sectors where Integrated Care Services utilise e-Rostering and e-Job planning solutions to be able to have a combined view of staff skills across the combined area. With increased pressures to provide more care in the community in order to reduce hospital attendance, there is a need for a more joined up approach to delivering treatment pathways. By allowing staff to see the combined skills that are available to them this could allow better use of hospital staff by identify where care staff have the skills to deliver procedures, take bloods etc. This would reduce the need for patients to attend hospital and pressure on staff. Staff across different areas could benefit from gaining more experience of delivering procedures and have better career opportunities by working across both sectors.

## THE BENEFITS OF CHANGE

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The key benefit of our solution is to enable NHS Trusts to improve their Elective Care Recovery. This will be done by enabling them to get a better understanding of the resources available to them, maximizing their use and hence reduce patient waiting lists.

Many NHS Trusts have Rostering solutions in place for their staff; however, they still struggle to ensure they optimise the use of staff and physical locations available to them. This is vital when trying to improve your Elective Care Recovery and safely reduce the numbers of patients on waiting lists. Maximising the use of location and resources will not only make the treatment of patients more efficient but will optimise the use of expensive resources. Trusts need to have a view of the staff available to cover shifts and their competencies. Trusts would ideally like to have a solution that is responsive to patient demand. The system would show staff/room/equipment availability and then automatically plan the best use of staff and resources based on the actual demand.

*With increased pressures to provide more care in the community in order to reduce hospital attendance, there is a need for a more joined up approach to delivering treatment pathways*



CACI can help to enrich your strategic workforce planning and maximise space utilisation to aid Elective Care Recovery. This will ultimately improve the patient experience as it will allow the Trust to maximise the number of procedures it can carry out. This will reduce the amount of time that patients are waiting for treatment. Also, the ability to be able to identify if staff have the ability within a Trust or a partner in the Care sector has resources with the skills to carry out procedures in the community is beneficial. This not only reduces the number of patients that need to attend hospital but can also improve the patient experience. There are many patients not reporting illnesses as they do not want to attend hospital. If they knew they could be diagnosed or treated at home, they are far more likely to report any illness at an early stage before the illness becomes chronic. This in turn would reduce the costs of having to deliver late-stage treatments to patients.

The solution will also enable the Trust to be able to capture information about all the procedures they carry out. This can include the ability to generate reports on the average duration it takes to carry out a procedure. This provides the ability to better forecast the numbers of procedures that can be carried out and provide more accurate information around how long waiting lists will be for procedures. This in turn improves the patient experience as they can be informed more accurately as to when a procedure can be carried out. Capturing information on procedures can also include information on which staff were involved in carrying out a particular procedure. This is important to Trusts as it provides the ability to affectively monitor and report on doctors /consultants contracts. These contracts are generally based around consultants carrying out several procedures in order to meet their KPI's. Reports can be easily generated to see whether they have met their targets, improving the ability to track their performance.

## DESCRIPTION OF THE SOLUTION

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CACI provides a modern workforce management product called Cygnum that can deliver this solution for the NHS. Benefitting from continuous development the software is reliable, scalable and deeply flexible. Cygnum is a multi-service workforce/resource management system, underpinned by a single, extremely performant database. CACI understands that all trusts have their own unique way of working so Cygnum can be configured to meet those needs.

Cygnum allows user-defined business rules and process to be coupled with sophisticated scheduling functionality. Based on patient demand, rules can be used to schedule staff to a treatment pathway based on their competencies and availability. This will allow the Trust to manage staff and resources based on the patient demand. Trusts will be able to improve the patient throughput by optimising the use of both staff and physical resources available to them. In addition, Cygnum's case management functionality drives process, allowing treatment pathways to trigger or notify the right person or system at the right time to act. Input forms provide the ability to capture information about a patient or task that has been completed. Workflows can then trigger the next action and notify staff of a required task ensuring treatment schedules are completed efficiently and on time.

Cygnum also offers the ability for managers and staff to benefit from self-service functionality that can be provided by way of a portal or a mobile app. This would allow staff to be able to view their shifts and login in and out of shifts where required. This could be particularly useful when staff are doing additional bank shifts or managers need to record agency staff starting and finishing shifts.

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# ABOUT US

CACI exists to help customers manage their organisations and businesses as efficiently as possible. Our technology delivers this by automating manual and repetitive tasks, freeing staff time for more valuable projects. Relevant examples include proficiently allocating appropriate resources, automating letters and communications, streamlining and automating business processes and workflows and enabling smarter management of staff engagement.

Headquartered in London, CACI Ltd. has an annual turnover of £138 million and employs over 1100 staff. Founded in the UK in 1975, CACI supplies a large range of information systems and marketing solutions to central and local government departments. Our US parent company, CACI Inc., has annual revenues of over \$4 billion and is publicly listed on the New York Stock Exchange. This gives us financial stability and working capital to deliver large and complex projects.