Electronic rostering: helping to improve workforce productivity

A guide to implementing electronic rostering in your workplace

October 2007

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About this guide

"We have been implementing our e-roster programme since April 2007 – this guide would have been invaluable when looking to select a provider and solution for our trust! Implementing e-rostering is neither easy or a small piece of work – but hard work pays off and we are starting to enjoy the benefits from it."

Mark Elmore
Deputy Director of Human Resources
Isle of Wight NHS PCT

"This guide is invaluable! It provides trust boards and clinical areas with the information they need to successfully implement an electronic rostering system that will help trusts deliver cost savings and improve productivity."

Lyn McIntyre
Assistant Chief Nurse
Cambridge University Hospitals NHS Foundation Trust

"We are currently live with the bank and self rostering on 13 wards. It would have been very useful to have had this guide to support the business case presented to our trust board prior to approval. Although we have covered most of the content ourselves there is still some information even now, that is current and useful."

Maria Stone
Recruitment and Retention Manager
South Devon Healthcare NHS Foundation Trust

"This provides an excellent framework for trusts implementing electronic rostering to work to, and should help shortcut the process."

Rob Fontaine
Business Manager – Operations and Nursing Directorate
Walsall Hospitals NHS Trust

Introduction

Staff costs account for 75 per cent of NHS running costs. How those staff are rostered and how their time is managed can have a significant impact on trust expenditure. Since 2001, when the Audit Commission first highlighted concerns about the high costs associated with temporary bank and agency staff[1], much progress has been made with using these staff more effectively. However, in 2006 the National Audit Office found that few trusts were using electronic rostering systems and recommended them as a way to help control demand for temporary staff, optimise the use of permanent staff, and reduce overhead costs through integration with payroll systems.

NHS Employers carried out an evaluation exercise in February 2007 to assess a number of electronic rostering systems currently available on the market and recommends that trusts consider implementing electronic rostering as part of their overall strategy to improve workforce productivity.

This guide highlights the productivity benefits of using electronic rostering systems to roster all staff groups[2], and to provide trusts with key information that will enable them to choose and then successfully implement an electronic rostering system. It is aimed at boards, chief executives, human resources directors, medical directors, nursing directors, and any others interested in improving the productivity of their workforce.

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1 *Getting the best from temporary nursing staff*. Audit Commission, 5 September 2001
2 Admin and clerical, allied health professionals, estates and ancillary, healthcare scientists, medical and dental, nursing and midwifery, scientific and technical and other clinical services.

What is electronic rostering?

Electronic rostering (or e-rostering) is simply an electronic way of efficiently managing when staff are needed to work. There are a number of e-rostering systems on the market that can be integrated into trusts' existing human resource information systems. While they all have different features and pricing structures, the basic concept behind them remains the same.

Electronic rostering systems enable managers to quickly build their rosters, defining the number of employees (by skill-mix) needed to meet the demands of the NHS. Employees can roster themselves to work within the slots defined. The line manager confirms their attendance, ensuring that pay accurately reflects the work done. Widely used in both the private and public sectors, e-rostering is now also being used in several NHS trusts, and many of them are already finding it improves productivity and makes significant savings through better management of their substantive and temporary workforces. It also enables trusts to manage their workforce more flexibly, and to make it easier for employees to choose a better work-life balance.

The NHS in England and Wales now has a fully integrated human resource information system, Electronic Staff Record (ESR), which has been designed to work with e-rostering systems. By combining the two systems, trusts can now manage their workforce flexibly and cost effectively to meet patient needs, whilst reducing payroll administration costs, and increasing the accuracy of payroll payments.

The ESR interface team has worked with many third party suppliers over the last 12 months to assist them in developing their products to make use of these interfaces. More details on some of the different suppliers can be found on page 18.

Why electronic rostering is important in today's NHS

NHS leaders need to use resources (people, technology, buildings) more flexibly and efficiently in order to provide new and better ways of delivering healthcare that meet the needs of patients. By improving the way NHS employees are managed through better rostering, greater value can be released from all resources so that better care is provided to patients.

In 2006, the NHS had a workforce of 1.3 million[3]. Lots of staff doing complex work in a rapidly changing healthcare market requires the NHS to have managers with the skills to produce efficient and effective work rosters and to plan their workforce to serve patients in the most productive way. The workforce configuration (skill mix) will need to be responsive to the key drivers of change over the next 20 years:

- the post-war baby boom will mean that the healthcare population aged 65 and over will have increased by around 22 per cent, those over 85 will have increased by 26 per cent over the next 20 years

- new advances in medical technology are producing new treatments that are turning fatal diseases into treatable conditions

- rising levels of obesity will increase pressures on the health system

- the current birth rate is up 10 per cent (to a new 25 year high)

- part-time working and other flexible working patterns are going to be increasingly popular to modern family life. Employers will need to consider this as part of their recruitment and retention strategy

- new health and social care partnerships and new types of commissioning will require more effective people management.

Trusts need to be more effective at workforce planning.[4] Good rostering should aim to deliver increased productivity by helping managers control resources effectively to meet patient demand. The Public Accounts Committee criticised trusts in 2007 for not taking "a strategic and managed approach to controlling demand for temporary nursing"[5], and recommended that "…strategy should be underpinned by a clear understanding of the requisite establishment levels needed to provide safe and effective care, which IT-based workforce management and rostering systems could help determine."

3 *NHS workforce: staff in the NHS 1996–2006*. NHS Information Centre, 26 April 2007
4 *Workforce planning*. p3 (summary). House of Commons Health Committee, Fourth Report of session 2006–07, volume 1, 22 March 2007 (HC 171-I)
5 *Department of Health: improving the use of temporary nursing staff in NHS acute and foundation trusts*, p5. House of Commons Committee of Public Accounts. 29th Report of session 2006–07, 14 May 2007

How can e-rostering help my trust to be more productive?

Flexible working options

E-rostering systems enable managers to improve the way their most valuable resource is managed – their people. Managers design their rosters, by taking account of the needs of the NHS first. This can include, if appropriate, patient demand. The number of staff needed by skill mix is then defined by time of day, and managers can allow their staff to self roster online. A good e-rostering system will allow staff to request the times they prefer to work, whilst ensuring that working and time off rules are followed.

A key benefit of e-rostering is supporting managers to match the right people skills to meet patient demand. Managers have better control to end over-staffed wards when there is minimal demand, and to avoid under-staffed and unsafe wards when patient demand is high. It's also easier for managers to arrange cross cover across wards or healthcare teams.

E-rostering systems make it easy for employees to request when they would like to work their contracted hours. Managers are more empowered to use their workforce more effectively in terms of controlling costs and improving the quality of patient care and the experience of patients.

The ability of e-rostering to support flexible working can result in increased attendance rates and a reduction in short-term sickness. It can also help reduce staff turnover. By retaining talented staff, recruitment and induction costs are therefore minimised, as are demands for temporary staffing cover. Better staff management clearly has a direct effect on delivering good patient care.

Greater control and less administration

E-rostering releases significant administrative time and enables managers to be more productive. For example, a typical experienced nurse manager would normally be expected to spend about three days each month to roster their staff. E-rostering can do this task in about three hours. Managers of wards and departments can therefore use their time more productively caring for patients and developing their staff.

Another important benefit of e-rostering is that it enables budget holders to have greater control and flexibility over how they use and keep within their funded establishment (overall staffing budget). The agreed funded establishment, recorded and maintained on ESR, will then be electronically shared with the e-rostering system to ensure that all systems remain accurate.

As well as better control in the use of substantive staff, managers can also make better use of their temporary staff (whether bank or agency) by making approved bookings only when they are needed. E-rostering systems make it easier for managers to introduce and maintain clear lines of accountability in respect to:

- a consistent method of quickly requesting and obtaining authorisation for filling substantive positions with temporary staff. The needs of the patient are therefore not put at risk, whilst still controlling costs

- obtaining authorisation for staff cover or increased staffing requirements where a sound business case is put forward

- making approved bookings, from the trust's own staff banks, NHS Professionals or agencies covered by NHS PaSA framework agreements

- deploying temporary staff correctly on arrival and supervising their work as required

- checking agency invoices received against rostered work periods.

Electronic Staff Record (ESR)

Trusts that connect an e-rostering system to ESR will secure the greatest administrative benefits.

The NHS ESR team recognised early in their implementation project that it was vital to ensure third party e-rostering systems could communicate with the ESR. They developed three generic interfaces to enable this.

- **Generic inbound attendance –** allows other systems to update ESR with pay details. These could be drawn directly from e-rostering or bank administration systems that record time on to timesheets. (The interface allows the transfer of any element classed as 'non-recurring' by ESR, plus details of travel and subsistence payments).

- **Generic inbound absence –** allows other systems to update ESR with details of absences.

- **Generic outbound –** passes details of new joiners, leavers and HR changes from ESR to other systems, reducing the need for double entry. ESR remains the master employment record, but the interface enables other systems to be kept up to date with amendments.

Currently, there are no charges arising from ESR for the implementation or use of these interfaces, but this will be reviewed in April 2008.[6]

These ESR/e-rostering interfaces allow data to be recorded once and then shared many times automatically. This ensures data is consistently accurate across both systems, and is updated without delays. ESR will inform the e-rostering system with details such as new starters, transfers and data changes, leavers, annual leave entitlements and planned absence. Additionally, the e-rostering system will send all enhancement payments and absence details (for example, sickness, study leave and holiday leave) to ESR, to automatically calculate and adjust pay.

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6 Any NHS organisation live on ESR and wishing to use these interfaces should log a call with the ESR helpdesk and ask for it to be referred to the interface team, who will respond to agree an appropriate project plan.

A good e-rostering product will enable trusts to improve the way they administer their rostering needs by managing their temporary (bank and locum) workforce. This ensures they are paid correctly by sending accurate details of 'work done' to ESR, thereby eliminating paper timesheets.

Work-life balance needs for staff

E-rostering enables staff to view future rosters. Staff can then plan when they would like to work. In a world where flexible working patterns are increasingly popular, e-rostering can be the best way of showing how much an employer values their staff, by allowing staff to choose the work patterns that suit them most. Annual leave can also be requested by employees and authorised electronically by the line manager. This results in an auditable and consistent approval process. This more transparent style can also foster more effective team working.

A good e-rostering system will also enable employees to make off-duty requests online for any period into the future and provide work flow functionality for managers to approve or deny these requests electronically. The e-rostering system will provide ward staffing levels and skill mix information to empower the manager to make informed decisions and balance the needs of the employee with the needs of the trust.

Fair and open rostering

E-rostering is completely fair to all staff. It helps managers and employees ensure that everyone has an equal and fair access to making requests to work patterns and planned absences, for example holidays, learning and training events.

A good e-rostering system will automatically maintain balances of time taken or time owed by the employee when they work a shorter or longer shift than planned. It allows the manager to authorise this flexibility and maintain control whilst ensuring compliance with the European Working Time Directive. This transparency and clarity around working time ensures that all staff are managed equitably and fairly, and ensures that staff take their rest breaks.

Sustained savings for trusts

E-rostering enables the employer to plan the most cost-effective skill mix (for both substantive and temporary workers) to get the most effective workforce to meet the needs of patients and service users. Savings are achieved in various ways including:

a) rostering the right number of staff to meet demand

b) working hours that are lost, but paid for, are eliminated

c) a reduction in sickness absence and improved attendance

d) line managers spend significantly less time managing rosters

e) a reduction in payroll administration.

Improved payroll accuracy

E-rostering enables a trust to remove payroll turnaround documents by electronically calculating the correct enhanced payments and absence records, after the ward manager has authorised any working or attendance variations.

A good e-rostering system will minimise all ward manager administration by providing a facility for employees to log their own attendance online, either from within the trust, or remotely, for electronic approval. Pay therefore accurately reflects work actually done and approved by the line manager.

How do I get e-rostering working in my trust?

The first step to getting an e-rostering system is to secure the backing of your trust board. The key benefits that a trust board is most likely to support are listed below.

Key benefits	Helping to reduce costs?	Helping to improve quality of patient care?	Helping to improve quality of service to staff?
Easy access to workforce information	yes	yes	yes
Flexible working	yes		yes
Improved absence management	yes	yes	yes
Improved clinical leadership		yes	yes
Improved payroll accuracy	yes		yes
More productive use of staff	yes	yes	yes
Reducing staff turnover	yes	yes	yes
Reduction in time spent on administration	yes	yes	yes
Rostering staff to meet the needs of patients	yes	yes	Yes

Good implementation would usually require a project management approach. The first step is to produce a project initiation document (PID) which will need to be supported by an executive director of the trust board. Their role is to sponsor the project. The purpose of the PID is to secure approval from the trust board so that the trust's preferred e-rostering system is implemented successfully with minimal delays.

There should be a separate business case to identify the benefits and costs of doing this work to justify the investment. The PID should summarise the benefits justification and discuss the benefits that will be realised. Depending on the scale and likely costs of the project, there may need to be a formal procurement process for the selection and purchase of the e-rostering system.

Once the trust's sponsor has approved the PID, a project team should be formed to develop a project plan that will contain details of all the tasks that will need to be completed. Ideally, the project team will consist of key skills such as:

- human resources (including medical staffing)
- organisational development
- workforce planning
- ESR benefits manager
- payroll
- finance
- senior nurse
- information management and technology
- staff-side representative.

It makes good sense for a project team to agree its own SMART objectives (specific, measurable, achievable, realistic, and time-bound) that describe what its project is intended to deliver. For example, "To implement a user-friendly e-rostering system within one month of procurement, that will deliver sustained cost savings, and produce rosters that meet patient needs and help staff work more flexibly."

While every trust may have specific needs that are unique, the e-rostering systems now available to the NHS are likely to meet the needs of most trusts. However, it is important that each trust is absolutely clear about the quality and functionality of the e-rostering system that it needs. It is advisable that trusts ask e-rostering suppliers to provide key information that can be used to select the right system for their trust. Listed below are some example key factors that a trust may wish to obtain evidence on, when considering which e-rostering system to buy.

Area	Key factors: evidence suppliers should supply trusts with
Actual costs per 1000 employees (head count)	Cost of software and annual maintenance
	Training
	Periodic software upgrades
	Hardware to support the software
	Hardware maintenance and running costs
	Periodic hardware upgrades
	Database maintenance and system administration costs
	Database storage costs
	Data transmission costs
Actual cost savings	Trust verified savings available (given from more than one trust)
	Ward level service improvements available
	Savings achieved by overall improved workforce management
Benefits	Will the system deliver improved management of funded establishment? Can the system respond to demand (e.g. patient demand)? Does the system roster both substantive and temporary staff. Does it produce timesheets? Can the system integrate to ESR?
	Are roster demands driven by the needs of the patient?
	Clinical demand led rostering, based on skill needs?
	Proven real-time NHS rostering rules engine
	Rosters that can be customisable at ward level
	Information on staff utilisation that can be liked to patient demand
	Integrated bank and agency module
	Web based staff self-rostering module
	Automatic production of enhanced hours and timesheets
	Key performance indicators (KPIs) dashboard covering: costs, efficiency, clinical risk, rostering fairness to staff

Customer success	Is the system used in more than 30 wards or work areas in a trust?
	How many trusts are using the system for real?
	How many are private customers?
	Can the supplier demonstrate implementation in areas similar to the services provided by your trust?
	Is the system capable of rostering all staff groups? Including doctors and those with flexitime and annual hours contracts?
	How many trusts are rostering all nursing groups?
Project support	Does the supplier assist in developing a rostering policy that will deliver the most efficient rosters?
	Is there project implementation support to the trust to ensure e-rostering success?
	Is there an established user group of NHS trusts from across the service?
ESR	Does the system use all of the available ESR approved interfaces?
	Does the system manage absence for staff with multiple posts and provide the correct absence updates to ESR?
	Is the functionality offered by the supplier's system complementary to that of ESR? If there is some overlap, what advice is provided to ensure no loss of operational efficiency to the trust?
	Does the supplier have more than three trusts where all staff are rostered and includes actual use of ESR's absence and time and attendance interfaces?
Helpdesk	Is full UK-based support available to the trust?
Procurement	Is the e-rostering supplier Office of Government Commerce Catalist listed? http://online.ogcbuyingsolutions.gov.uk
	You may want to check the European Official Journal of the European Union (OJEU) for European compliance www.ojec.com/
	Check the NHS Purchasing and Supplies Agency for further advice. www.pasa.nhs.uk/PASAWeb/NHSprocurement/
Company	Financial security of company – what is their status?
	How large is the organisation in terms of resources available?
	Is the company ISO9000 and TickIT certified?
	Is the company capable of successfully implementing a SHA-wide procurement?
References	Can the supplier provide references from several trusts, and provide details on how long it takes to achieve a return on investment? Is there a user group that can be contacted? Is there a charge for membership of the user group?

Trust rostering policy

Trusts should check that they have a rostering policy in place. Most trusts have them for nurses and midwives, but it is a good idea to extend the policy to the whole workforce for maximum productivity benefits. Trusts may find that they do have a rostering policy, whilst others discover that their policy needs bringing up to date to meet the flexible needs of the modern NHS. Typically, a rostering policy should contain the following:

Feature	Detail
Period of notice	The number of weeks before the off-duty is completed
Safe minimum staffing levels	The skill mix, and number of staff needed over a 24-hour period, for each ward or work area
Review period	Every 12 months and/or as part of any reconfiguration of services
Absence management	Specify the rules in respect to managing annual leave, study leave, sickness etc, including how requests are managed
Self-rostering	State how managers and employers operate self-rostering
Making requests for annual leave	Explain the process for requesting and managing annual leave
Workload variation	Describe how variation in workload demand is managed, e.g. changes in the number of beds, or patient demand
Requesting leave from work	Confirm the maximum number of requests employees can make for any single date
Cut off dates	Define the cut-off period when requests to change working patterns should be made
Openness	Confirm if all flexible working arrangements will be openly acknowledged and published, including maximum number of part-time posts the ward/workplace can have and the maximum number of fixed days that staff can work in succession
Flexibility	The policy should fully support Improving Working Lives (IWL) regarding work-life balance and flexible working. However, the needs of the trust to deliver quality patient-led services means that the need to roster safe staffing levels will always be the priority

Top tips for implementing an e-rostering system

Implementing an e-rostering system is a major piece of organisational development that is designed to deliver significant workforce productivity benefits and service improvements to patients. The investment should therefore be managed carefully by applying clear and workable governance arrangements. Here are some tips for implementing an effective e-rostering system:

- Assign a trust board director to sponsor the project to ensure sustained support and engagement of the trust board.

- Appoint a project board of key stakeholders and sign off an agreed terms of reference. This will ensure the scope of the project is understood and supported.

- Assign an experienced human resources manager to project manage the implementation of the e-rostering system. This will ensure that any issues that may hinder the successful implementation can be managed as soon as possible.

- Appoint a rostering manager to have overall responsibility for trust-wide rostering. This will help to ensure that rostering effectiveness is sustained across the whole trust. This could be the person identified to implement the e-rostering system.

- Involve and include staff in the project team (including staff side representatives) to ensure the reason for making changes is understood and supported.

- Check and confirm that the funded establishments are correct on both ESR and the general ledger. This will ensure managers use the e-rostering system to keep within the agreed total staffing budget.

- Does your trust rostering policy enable the workforce to be managed productively? The policy should include safe working levels and the process for using temporary/locum staff. Human resources, nurse, and medical directors should review and agree any changes.

- Review e-rostering systems and select the system that will deliver most productivity gains. It is important to check the system will manage temporary staff. Check if your local procurement hub can assist you to procure your system.

- Review your end-to-end payroll processes. Implementing e-rostering can release significant amounts of administrative tasks usually undertaken by clinical and administrative staff on wards and offices. More efficient processes release time for payroll and HR transactions. If the trust's payroll and HR transactions are provided by a shared service provider, then review contracts for potential cost reductions. For information on ways to help remove administrative waste and improve productivity, see 'Lean Thinking' at www.institute.nhs.uk/quality_and_value/lean_thinking/lean_thinking.html

- It is important to check just how user-friendly the system is, as line managers and staff will need to be trained. Don't forget that you can use ESR to update an employee's training record.

- Check if any job roles need redesigning or job descriptions updating. This will help ensure that the new ways of working will deliver sustained productivity improvements.

- Inform your local ESR benefits manger to switch on the e-rostering interface.

- All contracts must fully comply with trust's standing financial instructions/orders, and any statutory requirements, in particular those relating to the EU Procurement Directives. Trusts are advised to contact their local supplies officer, who will be able to advise, or contact the NHS PaSA helpdesk at www.pasa.nhs.uk or nww.pasa.nhs.uk

- Implementing e-rostering on a ward will release significant senior nurse manager time, and provide managers with key performance information about their workforce. It is therefore an ideal opportunity to review the NHS Institute's Productive Ward and Productive Community Hospital programmes for tips on how to use the extra nursing resource to improve patient care.

Available electronic rostering systems

Several trusts are already using e-rostering to deliver real benefits. The main suppliers to the NHS that have developed their systems to work with ESR, are listed in the table below.

Product	Suppler contact details[7]	Indicative cost per 1,000 employees[8]	Number of NHS trusts actively rostering staff in UK[9]
CareWare	**Care Systems** 1375 Piccard Drive, Suite 225, Rockville, MD 20850 USA T: +001 (240) 404 0355 E: info@caresystemsinc.com www.caresystemsinc.com	£55,100	3
eHL	**SMART** Drivers End Lane, Codicote, Hertfordshire SG4 8TR T: 01438 822 222 E: sales@smart-workforce.com www.smart-workforce.com	£57,675	3
MAPS Healthroster	**Manpower Software Plc** The Communications Building, 48 Leicester Square, London WC2H 7LU T: 0207 389 9500 E: enquiries@manpowersoftware.com www.manpowersoftware.com	£75,389	25
Optimize	**Powertec Systems & Consultancy Ltd** 35 Maiden Lane, Reading RG6 3HD T: 0118 935 0000 E: info@optimize-roster.co.uk www.optimize-roster.co.uk	£45,000	1
RosterPro	**HMT** Swallowfields Courtyard, Wolverhampton Road, Oldbury, West Midlands B69 2JG T: 0121 224 1000 E: sales@hmtsystems.co.uk www.hmtsystems.co.uk	£58,500	18
Staff.Care	**Software Medical Informatics Ltd** 4 Edison Village, Nottingham Science Park University Boulevard, Nottingham NG7 2RF T: 0845 370 7879 E: support@smicare.net www.smicare.com	£22,210	3

7 Other e-rostering systems are available, but trusts are advised to check with their ESR benefits realisation manager if they are on the approved list for ESR connectivity.

8 These costs are indicative only, and reflect cost correct at the time provided by the supplier (3–5 September 2007) (excluding hardware costs as some trusts may have their own server). Cost changes are wholly the responsibility of the supplier. Average cost per employee usually reduces with economies of scale.

9 The number of trusts with confirmed live licences and where trusts are rostering staff in more than three wards or work places, or have plans to do so.

Conclusion

This guide will help trusts who want a more productive workforce. Trusts can work smarter by ensuring the best skill-mix is always rostered to reflect real patient demand. Clinical time can be released through the removal of lots of wasteful manual administrative rostering and paper-based payroll approval processes. Implementing an e-rostering system can make a real difference by releasing more time to deliver higher quality services for their patients.

Further information

For more information on workforce productivity in the NHS, please visit NHS Employers' website at **www.nhsemployers.org/workforce/workforce-2760.cfm**

For more information about the NHS Institute's Productive Ward and Community Hospital programmes, please visit their website at:
www.institute.nhs.uk/quality_and_value/productivity_series

Please contact Adrian Whittle, programme lead – workforce productivity and service improvement at **adrian.whittle@nhsemployers.org**

NHS Employers

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NHS Employers represents trusts in England on workforce issues and helps employers to ensure the NHS is a place where people want to work.

The NHS workforce is at the heart of quality patient care and we believe that employers must drive the workforce agenda. We work with employers to reflect their views and act on their behalf in four priority areas:

- pay and negotiations
- recruitment and planning the workforce
- healthy and productive workplaces
- employment policy and practice.

NHS Employers is part of the NHS Confederation.

Contact us

For information on how to become involved in our work, email getinvolved@nhsemployers.org

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