NHS

E-rostering the clinical workforce: levels of attainment and meaningful use standards

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NHS England and NHS Improvement

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Introduction

The NHS Long Term Plan[1] contains the commitment that "by 2021, NHS Improvement will support NHS trusts and foundation trusts to deploy electronic rosters or e-job plans". This document supports NHS providers in implementing and using e-rostering software to its fullest potential.

E-rostering ensures staff are appropriately allocated to provide high quality and efficient health services. Effective e-rostering considers factors such as patient needs, staff needs, organisational needs, the workforce and skills required to deliver services, and workforce availability. Trusts are responsible for striking the right balance between patient safety, cost and efficiency: used in the right way, e-rostering can help achieve this.

We set out five 'levels of attainment' in using e-rostering systems. These enable a trust to benchmark its progress as it adopts e-rostering software. Each level of attainment is underpinned by 'meaningful use standards'. These describe the processes and systems trusts need to meet each level of attainment.

By adopting these standards, trusts can be assured they have implemented the e-rostering systems and processes necessary to achieve productivity gains. If they adopt the equivalent e-job planning standards[2] (see page 5) at the same time, they can be assured they have deployed their clinical workforce to best effect.

The NHS clinical workforce has the skill, competence and compassion to deliver world-class patient care. As recommended by Lord Carter,[3,4] the meaningful use of workforce deployment software can ensure these qualities are deployed to best effect, across all clinical professions, in all healthcare settings.

[1] https://www.longtermplan.nhs.uk/
[2] *E-job planning the clinical workforce: levels of attainment and meaningful use standards*, NHS Improvement, June 2019.
[3] https://www.gov.uk/government/publications/productivity-in-nhs-hospitals
[4] https://improvement.nhs.uk/about-us/corporate-publications/publications/lord-carters-review-unwarranted-variations-mental-health-and-community-health-services/

Scope

In line with the NHS Long Term Plan commitment, we expect all the clinical workforce will eventually be on an e-rostering system. We developed the levels of attainment and meaningful use standards to be relevant to all sectors – acute, mental health, community and specialist NHS providers.

Why is e-rostering important?

E-rostering gives an overview across the organisation, not only month by month but day to day and even shift to shift, highlighting hotspots needing intervention for staffing levels to remain safe and efficient. An effective e-roster empowers e-roster creators and senior staff to make informed decisions. It enables them to review and change future e-rosters by providing:

- details on staffing levels in real time to help plan for demand, taking account of sickness, leave, skills and competencies, staff changes, patient acuity and dependency
- redeployment of resources for a consistent staffing level, resulting in less understaffing, ensuring safety and efficiency and reducing reliance on temporary and agency staff
- flexibility to cope with daily and hourly changes by redeploying staff across the organisation to maintain safe staffing levels.

E-rostering is therefore essential for achieving the productivity gains described in Lord Carter's reports and the National Quality Board's expectations on safe, sustainable and productive staffing.[5]

How many trusts use e-rostering?

Our survey in July 2018 to assess e-rostering software coverage and usage across all clinical workforce groups in acute and community trusts found 43% of trusts at

[5] https://www.england.nhs.uk/wp-content/uploads/2013/04/nqb-guidance.pdf

attainment Level 0 (see page 7 for definition). This suggests few have realised the benefits of e-rostering software. We also found that 59% of the clinical workforce is deployed via an e-rostering system. There is therefore a significant opportunity to improve trusts' use of e-rostering software.

Implementing e-rostering

Each trust's individual circumstances will influence its adoption of e-rostering. Some workforce groups are more accustomed to e-rostering than others. As a result, the manner and timescale for implementing e-rostering will vary between trusts and between workforce groups within a trust.

Implementing e-rostering for workforce groups to which it is a new concept will need significant board-level support. Evidence shows that an organisation's leadership is the single biggest influence on culture; paying attention to this will make success in implementing this guidance more likely. Implementation should be a collaborative process involving employees and their representatives.

When implementing e-rostering systems, equality impact assessments and monitoring should be carried out to ensure that e-rostering is introduced fairly and equitably. Trusts should take positive action to promote equality and eliminate discrimination on the grounds of sex, marital status, pregnancy, race, colour, nationality, disability, sexual orientation, age, gender identity and religious belief.

In addition, a health and safety assessment should be made when introducing e-rostering systems, ensuring that e-rostering does not adversely impact the health and safety of employees.

Interdependency with e-job planning levels of attainment

You should use the levels of attainment and meaningful use standards with their e-job planning counterparts.[6]

For some workforce groups, notably staff who work exclusively in one clinical area (eg purely ward-based staff) and doctors in training, e-rostering alone is sufficient because the service requirements for clinical capacity have been defined.

However, for many workforce groups e-job planning is essential for using e-rostering to its maximum potential. E-job planning enables the workforce availability and capacity to be defined accurately and in line with service objectives. This information can then be used to create an e-roster. For these workforce groups, we envisage that trusts would be unable to meet the higher levels of attainment for e-rostering without an effective e-job planning system.

You should therefore adopt e-rostering systems at the same time as e-job planning systems. During this process, trusts should use as many of the software functions (such as recording clinical unavailability) as possible.

[6] *E-job planning the clinical workforce: levels of attainment and meaningful use standards*, NHS Improvement, June 2019.

Levels of attainment and meaningful use standards

How to use the levels of attainment and the standards

We designed the levels of attainment to assess a trust's progress in adopting and using e-rostering software effectively. You can use them to benchmark your entire trust or an individual workforce group, department or team.

The meaningful use standards describe the processes and systems that trusts need to meet each level of attainment.

The levels of attainment, and their associated meaningful use standards, are:

1. **chronological** – to reflect the trust's progress towards the most effective levels of using e-job planning systems

2. **all-encompassing** – to suit any clinical workforce group, while allowing for nuances specific to a workforce group

3. **measurable** – to assess how far trusts have implemented e-rostering systems and to enable NHS Improvement to identify lessons to share and target support

4. **meaningful** – so we are setting standards that directly relate to matching workforce capacity to demand.

The levels of attainment are sequential, and all the standards underpinning each level must be achieved before the next level can be met. For example, to meet Level 2, all the standards underpinning both levels 1 and 2 must be met. To meet Level 3, all the standards underpinning levels 1, 2 and 3 must be met, and so on. It is possible for one clinical workforce group to be at a different level from another, but we expect trusts to plan to move all clinical workforce groups to Level 4.

Level 0	**No attainment:** e-rostering software may be being procured or in place, but fewer than 90% of employees are fully accounted for on the system. E-rosters may be in place (eg paper-based or Microsoft Excel) but are not recorded on dedicated e-rostering software.

Level 1	**Visibility of the individual on the e-roster:** the trust has procured e-rostering software, ensuring paperless payment mechanisms, and trained its staff in its use. All contracted hours are recorded on the system, ensuring safe working hours and appropriate skill-mix. Trust-wide policies detail the e-rostering process, ensuring consistent roster rules are applied. At least 90% of employees are registered on an e-roster.

Standard 1.1: The trust has procured e-rostering software, ensuring paperless payment mechanisms

- E-rostering software is in place.
- Staff access to the e-rostering system complies with local information governance policy, so personnel have the right and proper access to oversee the rosters of those in their line management structure and can see relevant system reports.
- Less than 10% of staff use other systems such as Microsoft Excel or paper-based systems.
- The trust’s payroll system and e-rostering software automatically reconcile. This ensures staff are paid for shifts attracting enhanced pay (eg unsocial hours, on-calls and bank shifts), eliminating the need for paper timesheets.

Standard 1.2: Staff have been trained in the e-rostering process

- All staff who use the e-rostering software have been trained for the role.
  - This training includes how to use the software, as well as other e-rostering skills.
- Software training is ongoing to enable troubleshooting and use of all software functions.

Standard 1.3: All contracted hours are recorded on the system, ensuring safe working hours and appropriate skill-mix

- All contracted hours are recorded on the system, so that staff availability appears in budgeted whole-time equivalents (WTE).
  - Staff clinical availability and clinical unavailability (eg study leave, annual leave, management time) should be documented on the system.
  - Reports detailing staff availability and unavailability, including staff sickness and unused hours, should be available for the team leader to review regularly.
- Rules applied to the roster ensure it complies with contractual, national and local guidelines on safe working hours.
- Where available, validated tools are used to identify the number and skill-mix of staff required for the service area. Where these tools are not available, clinical judgement and local data are used instead.
  - To help achieve an appropriate skill-mix, the software should be used to record staff's key skills (eg IV trained, ALS trained, can be 'in charge' of clinical area).

Standard 1.4: Trust-wide policies detail the e-rostering process ensuring consistent roster rules are applied

- A trust-wide e-rostering policy covers all clinical workforce groups and has been approved in the past three years. It covers all aspects of the e-rostering process.

- This policy should establish rules to be applied to the e-rostering system for consistency and equity when managing leave requests and other forms of clinical unavailability.
- It should ensure sickness codes are recorded consistently across the trust. This will align sickness recording on the e-rostering system and electronic staff record, and it will enable reports to be generated that inform the trust's management of sickness absence.
- The policy should state that employee working restrictions are reviewed at least annually.
- The policy should recommend that overtime is not routinely rostered due to the impact of regular overtime on the calculation of an employee's holiday pay entitlement.

- The trust-wide e-rostering policy is aligned to other relevant policies (eg annual leave, flexible working), as well as national guidelines and workforce-specific contractual requirements. This policy sets out justified workforce-specific nuance, ensuring each professional group's unique contribution is accounted for.
- The policy identifies a single accountable officer responsible to the trust board for implementing and monitoring e-rostering. They lead an 'e-rostering workforce group' with a specific remit to implement and maintain e-rostering in the trust. This e-rostering workforce group meets regularly, and we recommend monthly.
- The director of human resources is accountable for ensuring all workforce policies are up to date.

Standard 1.5: At least 90% of employees are registered on an e-roster

- At least 90% of employees have an active account and are visible on the e-rostering system.

Level 2

Timetabling: the software is used to capture shift preferences and staff's personal working patterns via a remotely accessible application. The software can automatically generate rosters, with final roster publication at least six weeks before the roster start date. Unfilled shifts are identified through regular roster reviews. The software reports key performance indicators for use at all organisation levels.

Standard 2.1: The software is used to capture shift preferences and staff's personal working patterns via a remotely accessible application

- Staff can access the e-rostering system remotely via PC, tablet or mobile phone.
- Through these remotely accessible applications, they can view their roster, request leave, request swaps and book temporary work. Where software systems enable staff to set preferences for specific shifts, they should be able to do this through the remotely accessible application.

Standard 2.2: The software can automatically generate rosters

- The system is used to automatically generate rosters, taking into consideration employees' working restrictions, the required skill-mix, safe staffing hours, employees' agreed clinical unavailability and, when feasible, staff preferences and personalised working patterns.
- Automatically generated rosters ensure fairness between staff and reduce time taken to create rosters. However, a responsible individual must always check and approve them to ensure shifts are filled appropriately and rules have been applied as intended.

Standard 2.3: Final roster publication occurs at least six weeks before the roster start date

- The final roster must be published at least six weeks before the roster start date – although it should be published as soon as possible (ideally 12 weeks in advance). This will maximise the opportunity to fill vacant shifts with substantive or bank workers.

Standard 2.4: Unfilled shifts are identified through regular roster reviews

- The trust reviews available clinical staff and unfilled shifts daily. Unfilled shifts are covered by redeploying available staff (where feasible).
- The roster is reviewed to identify unfilled shifts at least weekly.
- The trust has a well-developed policy for escalating unfilled shifts, including when the temporary workforce should be used to fill them.
  - The trust has a clear pathway for who books bank staff and provides managerial approval.
  - It has a clear pathway for booking agency staff and for who approves NHS Improvement’s agency tier system while booking agency staff.
- Temporary workforce software and applications are integrated with the e-rostering software to avoid duplicating data and to make booking easier for managers and bank staff.

Standard 2.5: The software reports key performance indicators for use at all organisation levels

- Key performance indicators and metrics, as described in Appendix 2, are reported at least quarterly at both departmental and trust board level.
- Metrics from the software are used at least weekly to actively manage clinical unavailability and unfilled shifts.

Level 3

Capacity and demand: teams analyse capacity and demand, using evidence-based tools where available. Team 'capacity and demand' meetings ensure rosters reflect service needs and team objectives. Software is used to report productivity and deployment metrics.

Standard 3.1: Teams analyse capacity and demand, using evidence-based tools where available

- Capacity and demand are analysed at least every six months to establish what will be expected of the service in the next six months. This analysis is informed by the National Quality Board's guidance on safe, sustainable and productive staffing.[7]
- The analysis will establish the staff numbers and skill-mix required to deliver the clinical service. Clinical leads have non-clinical managerial support to help with this. Data is included from:
  - the e-rostering system
  - the e-job planning system (if applicable)
  - other clinical systems, including data on patient outcomes
  - evidence-based and validated acuity and dependency tools (if available)
  - any available deployment metrics such as CHPPD (care hours per patient day) or other equivalent metrics
  - clinical judgement.
- Where possible, the e-rostering system should automatically reconcile this data to generate recommendations for the team's baseline staff numbers and skill-mix. The team leader should always review this to make sure clinical judgement has been applied appropriately.

[7] https://www.england.nhs.uk/wp-content/uploads/2013/04/nqb-guidance.pdf

- The results of this analysis inform future team e-rosters and will help with setting the team's objectives.

Standard 3.2: Team 'capacity and demand' meetings ensure that rosters reflect service needs and team objectives

- Team capacity and demand meetings occur at least every six months to set team objectives and outline the team's expected clinical output for the next six months (based on the team's capacity and demand analysis).

- The team agrees a plan for delivering these outputs, ensuring its roster template is compatible with the capacity and demand analysis. The roster will therefore be fully aligned to the team's objectives.

- The wider multidisciplinary team has been consulted so the impact of any changes to the service has been fully considered.

Standard 3.3: Software is used to report productivity and deployment metrics

- The trust should adhere to NHS Improvement's guidance on productivity and deployment metrics. This includes CHPPD guidance[8] and any future guidance on deployment metrics.

- These deployment metrics should be tracked and reported to the executive board. Granular reporting should be integrated with the trust's service line reporting produced by the finance team, for monthly review within each service line.

[8] https://improvement.nhs.uk/resources/care-hours-patient-day-guides/

Level 4

Organisational e-rostering: there is board-level accountability for monitoring e-rostering across all workforce groups, ensuring audit and review. Team objectives, departmental budgets and the trust's objectives are aligned, so it can respond dynamically to services' changing needs.

Standard 4.1: There is board-level accountability for monitoring e-rostering across all workforce groups

- The trust clearly identifies and details the responsibilities of its board members, clinical directors and service leads/budget-holders for implementing and delivering e-rostering.

Standard 4.2: The trust undertakes at least a quarterly audit and review

- An executive-led governance group is responsible for e-rostering (this can be an evolution of the e-rostering workforce group set up to satisfy Standard 1.4). Specific responsibilities include:
  - implementing and reviewing trust-wide policies
  - ensuring these policies are applied consistently between teams and workforce groups
  - regularly auditing and reviewing the e-rostering process, ensuring that policy guidelines have been fully applied to all workforce groups
  - implementing the levels of attainment and meaningful use standards in this document.
- The trust engages with requests from external agencies for data on the e-rostering process.

Standard 4.3: Team objectives, departmental budgets and the trust's objectives are aligned

- Trust-level objectives are established, and team objectives are aligned to them while ensuring delivery of the department's core services.
- A professional triumvirate including the finance, clinical and human resources teams undertakes a service-level review at least quarterly. This review will be supported by analytics and operational intelligence. This review includes:
  - bank and agency spend
  - unfilled shifts
  - relevant e-rostering key performance indicators and metrics (see Appendix 2)
  - workforce recruitment and retention statistics
  - staff sickness rates
  - reviewing the team's objectives.
- Through this evidence-based review, they produce a detailed plan to manage any variance from best practice expectations.
- The evidence-based review informs the department's budget, so it is aligned to the team's and trust's objectives.
  - Automatic reconciliation between e-rosters, ledgers, roster templates and electronic staff record should occur, ensuring consistency across these platforms.

Standard 4.4: The trust responds dynamically to services' changing needs

- Services' changing needs are identified through:
  - monitoring key performance indicators and metrics (Standard 2.5)
  - capacity and demand analysis (Standard 3.1)

  - team e-rostering meetings (Standard 3.2)
  - productivity and deployment metrics (Standard 3.3)
  - quarterly service-level reviews at the professional triumvirate meetings (Standard 4.3).

- When identifying changing service requirements, the trust ensures e-rosters are updated to reflect them.

- E-rostering redeploys workforce resources appropriately and in collaboration with affected staff, maximising their potential so the right staff with the right skills are in the right place at the right time.

Appendix 1: Definition of terms

Clinical demand: clinical activity taking account of patient needs, commissioning priorities and staff training needs. If available, validated acuity tools should be used to help establish demand.

Clinical workforce: any member of the workforce who undertakes clinical or clinically related tasks, whether patient-facing or not.

E-job plan: a prospective, professional agreement describing an employee's duties, responsibilities, accountabilities and objectives. It describes how their working time is spent on specified direct clinical care (DCC) and on specified supporting professional activities (SPA).

Personalised working pattern: an employee's unique pattern of shifts agreed with their line manager (eg only working Mondays due to care commitments).

Staff preferences: specific combinations of shift types requested by an employee (eg working the late shift on a Monday).

Working restrictions: part-time working, also known as flexible working or less than full-time training (LTFT).

Appendix 2: E-rostering key performance indicators and metrics

E-rostering level of attainment – this should be broken down by professional group and monitored at trust level. It should be reported at least quarterly.

Percentage of staff on the e-rostering system – the trust records the percentage of clinical staff who have an account on the e-rostering system. Trusts are aiming for more than 90%. This should be broken down by team and professional group and monitored at trust level. It should be reported at least monthly.

Percentage of e-rosters approved six weeks before the e-roster start date – this should be reported at least monthly. It should be broken down by team and professional group and monitored at trust level.

Percentage of system-generated e-roster (auto-rostering) – this is the percentage of shifts filled by the system-generated functionality. It should be reported at least monthly. It should be broken down by team and professional group and monitored at trust level.

Planned versus delivered hours (net hours) per WTE – cumulative variance between the number of planned contracted hours and actual delivered hours per WTE per roster period, excluding doctors in training. The trust should aim for less than a variance of 13 hours per WTE. This should be reported at least monthly. It should be broken down by team and professional group and monitored at trust level.

For nursing staff: percentage of actual clinical unavailability versus percentage of budgeted clinical unavailability (headroom) – this should be reported at least monthly. It should be broken down by team and monitored at trust level.

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