South Tees Hospitals NHS

NHS Foundation Trust

Meeting / Committee:	Board of Directors	Meeting Date:	Tues 31st July 2012

This paper is for: (Only 1 column to be marked with x as appropriate)	Action/Decision	Assurance	Information x

Title:	Benefits realisation – E rostering

Purpose:	The purpose of this report is to provide an update summarising the tangible benefits that have been realised from the introduction of E-Rostering

Summary:	The paper provides information on: • An update in relation to Centralised Roster production project • Future implementations and plans • Potential avoidable costs are highlighted and therefore potential further cost savings are highlighted • Areas for further improvement in roster management. • Process in relation to future performance management approach

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Recommendation:	The Board of Directors is asked to receive the report

Implications (mark with x in appropriate column(s)	Legal	Financial x	Clinical x	Strategic x	Risk & Assurance

SECTION 1: Benefits realisation from investment in e-rostering

1) Introduction

Staff costs account for 75 per cent of NHS running costs. How those staff are rostered and how their time is managed has 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, much progress has been made with using 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. Electronic Rostering is also a key piece of work identified in the Energising for Excellence Programme launched and developed by the newly appointed CNO Jane Cummings.

The NHS`s fully integrated human resource information system, Electronic Staff Record (ESR), was designed to work with e-rostering systems. By combining the two systems, we can now manage our workforce flexibly and cost effectively to meet patient needs, whilst reducing payroll administration costs, and increasing the accuracy of payroll payments. Two wte posts within the payroll team have been released following the integration of the ESR and electronic rostering system. **This led to an annual cost saving of £38,000 in payroll.**

Working practices

The implementation of the E-rostering system means that as a Trust we have been able to review the working practices within the nursing and midwifery teams. In some areas shifts and staff start and finish times had been created based on individual staffing needs. Issues such as these have been removed with some divisions standardising shift start and end times, which decreases risk to both staff and patients with some staff moving across units to staff areas of higher patient demand.

During a recent internal audit (2011/12) ward managers identified their perceived benefits of the E rostering system as;
- Financial savings
- Fairness to all staff
- Time saving
- Reduction in payroll queries
- More detailed management information
- Efficient use of staff
- Minimises use of bank and agency staff
- Greater visibility of roster safety (skill mix / patient safety)

Flexible working options

The E-rostering system enables our managers to improve the way their most valuable resource is managed – their people. Managers design their rosters, by taking account of the clinical needs of the unit first. The number of staff needed by skill mix is then defined by time of day, and managers allow their staff to make requests for days off, study leave and annual leave via the employee on line system. A key benefit of E-rostering is supporting managers to match the right people skills to meet patient demand. Managers have better control and visibility to move staff from where there is minimal patient demand to areas which are under-staffed and potentially unsafe when patient demand is high. It's also easier for managers to arrange cross cover across wards or healthcare teams and staff are sometimes moved across the wards within divisions to meet patient demand. This can be due to low levels of staff unavailability due to sickness or maternity leave but can also

be due to non compliance with Annual Leave (AL) parameters. 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.

As an organisation we have been identified as a national outlier by Allocate Software for the amount of flexible working agreements we have, which is impacting on staff availability in many areas. (30-40%) Better staff management clearly has a direct effect on delivering good patient care.

Greater control and less administration

E-rostering has released administrative time in some areas and has enabled managers to be more productive. For example, a typical experienced ward manger would normally be expected to spend about one to two days each month to roster their staff. E-rostering can do this task in about three hours in some units; however in areas of high staff flexible working agreements and unavailability, this impacts on roster production time significantly. Managers of wards and departments with low levels of flexible working can therefore use their time more productively caring for patients and developing their staff. E-rostering enables ward managers to plan rosters well in advance and forecast staffing requirements and any potential future staffing issues ahead of time, giving them additional time to take action to address in advance, reducing reliance on agency staff. Some of our ward managers produce rosters 3-4 months in advance.

Improved payroll accuracy

The successful integration with payroll highlighted that manual processes are subject to error and that automated integration ensures that staff are remunerated correctly. E-rostering has enabled the 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. Pay therefore accurately reflects work actually done and approved by the ward manager. The ESR/E-rostering interface allows 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. Payroll team have identified that since the interface with the electric rostering and ESR system and removal of paper based timesheets that the payroll errors have reduced significantly.

The E-rostering system automatically maintains 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. During the implementation of E rostering to nursing teams there were numerous occasions when staff were being paid for their breaks and not complying with EWTD. There were also huge inconsistencies in the break times staff were allocated across all areas. This has now been addressed and a consistent approach is now taken. The organisation can now be confident that all clinical areas are compliant with EWTD and staff are no longer being paid for their "unpaid" breaks. This has resulted in additional direct work time within wards / departments.

Roster Management Reports / Governance

E-rostering technology records annual leave, staff shift preferences, sick leave, staff movement between wards, and staff skills. It can also hold information on staff clinical competencies and provides an accurate record for managers to identify staff with competence and with expiring competencies to target training as required, which promotes NHSLA compliance and provides evidence to support this. It also provides a clear visible auditable record of staff work on a day to day basis which will support any legal or professional cases where evidence from the staffing roster

is required. Previous to E-rostering the paper based evidence was often illegible and could often not be used in evidence.

Progress to date identifies that roster management is slowly improving across the organisation and methods of achieving fair and cost effective rosters are becoming embedded in the Trust. Staff are well supported to achieve KPIs by the roster team. This is essential to ensure we achieve the potential savings identified in the original business case and PiD for E rostering. Senior staff/roster creators are trained in the process of administration. The introduction of the link to ESR/payroll has further reduced the administration burden for ward managers freeing them up for direct patient care. Divisional Managers and Senior Nurses have all been provided with Roster Central module training. The Roster central module allows management teams to access succinct, accurate reports and analysis of those reports and to identify future staffing problems and allows time for clinical teams to implement contingencies to avoid future problems.

SECTION 2 – CENTRALISED ROSTERING EVALUATION

Following an initial pilot of production of shadow centralised rosters in the organisation from the period April 2011 to June 2011 the E roster team were asked to undertake an extended project initially focusing on production of 65 centralised rosters for the organisation over a 6 month period. The initial scope of the project was for the centralised team to make any daily amendments to rosters over the 6 month period in addition to central roster production. However despite identifying the need for compliance with agreed timescales in ensuring annual leave and any other unavailability (e.g.: study leave, management time etc - in line with agreed roster KPI`s) was entered into the roster on time, prior to the roster being centrally produced, it was evident in the vast majority of rosters that this was not the case. This significantly delayed roster production as the roster producer then had to negotiate with the ward manager to ask for the leave management to be corrected if possible to ensure compliance with KPI`s.

Following the first month of central roster production there were 1027 requests for changes to rosters in the first week. When asked to identify the reason for the change it was evident that this was as a result of staff preference (as this was a planned roster that was to be worked 3 weeks in advance). Complaints were also received by ward managers that they felt that having to communicate any changes to the central team was duplicating their workload. The impact of this and also the excess numbers of changes needing to be made in the rostering system by the central team was unmanageable and resulted in the decision to allow changes post roster production and approval to be managed by the ward manager.

The delay in roster production and compliance with timescales impacted greatly on the workload of the e roster team and resulted in a large amount of excess hours being worked by each of the 3 staff members in order to meet deadlines. One member of the team subsequently left the team which resulted in a reduced team of 2 members of staff and therefore the numbers of realistically achievable centrally produced rosters was reduced to 33. The 2 members were also supporting all other 84 units using the rostering system on a day to day basis, in addition to providing the system administration role and training.

In summary, the task of production of centralised rosters was completed by the central team for a period of 6 months from October to March rosters inclusive, any ongoing changes and amendments were managed by ward managers.

1. Costing Matrix

The costing matrix shows how much was spent, per hour on each enhancement or additional payment, split by banding on each of the planned rosters. The definition of enhanced pay is increased payment made on shifts classed as unsocial i.e. evenings after 8pm, nights, weekends, and bank holidays, additional pay is where a staff member has worked over their contracted hours and receives an extra payment. A snapshot of the cost was taken at the time the roster was fully approved by the roster creator. The September roster was produced by the Ward Managers and is used as the benchmark, each roster from this point on was produced by the e-rostering team and the costing per hour in each roster is compared to the September benchmark. If the cost is lower the cell is coloured green and if the cost was higher the cell is coloured red. The aim is to determine how effective the subsequent rosters produced by the team were against the September benchmark.

The costing matrix was devised to remove as much as possible, all of the varying factors in the costs of rosters such as number of duties filled, number of public holidays, grades of staff taking annual leave and starters and leavers to the unit amongst other variables. If more shifts were filled due to a new member of staff joining the ward, this would raise the basic cost of the roster and potentially the enhancements and subsequently the overall cost of the roster, so it was felt this

approach was a much better tool of measurement than just comparing the overall top level roster cost.

Figure 5.1 shows a finished costing matrix for an unnamed ward.

		A	B	C September	D October	E November	F Jan-02	G Jan-30	H February	I March
2	Band 7	Night	-	-	-	-	-	-	-	-
3			Unsocial	£8.00	£8.00	£0.00	£0.00	£0.00	£0.00	£0.00
4			Sat	£7.04	£0.00	£0.00	£0.00	£7.07	£0.00	£0.00
5			Sun	£11.75	£0.00	£0.00	£0.00	£11.73	£0.00	£0.00
8	Band 6	Night	-	-	-	-	-	-	-	-
9			Unsocial	£6.00	£6.00	£0.00	£0.00	£0.00	£0.00	£0.00
10			Sat	£5.70	£5.24	£5.39	£5.34	£4.78	£4.80	£5.68
11			Sun	£8.92	£8.74	£8.99	£8.53	£8.70	£7.95	£0.00
12			Bank Hol				£11.39			£11.39
14	Band 5	Night	£4.71	£4.65	£5.49	£4.71	£4.59	£4.57	£4.57
16			Sat	£4.69	£4.61	£4.53	£4.57	£4.64	£4.47	£4.58
17			Sun	£7.71	£7.78	£7.71	£7.67	£7.89	£7.75	£7.78
18			Bank Hol				£9.05			£9.12
26	Band 3	Night	£3.04	£0.00	£3.02	£3.02	£3.03	£3.04	£3.03
28			Sat	£3.04	£3.04	£3.03	£3.04	£3.02	£3.04	£3.06
29			Sun	£5.04	£5.04	£5.04	£5.04	£5.04	£5.04	£5.05
30			Bank Hol				£6.00			£6.05
32	Band 2	Night	£2.64	£2.64	£2.64	£2.63	£2.62	£2.68	£2.67
34			Sat	£2.62	£2.64	£2.63	£2.63	£2.66	£2.65	£2.63
35			Sun	£4.37	£4.41	£4.41	£4.40	£4.50	£4.51	£4.46
36			Bank Hol				£5.17			£5.28

Figure 5.1: Example of a Costing Matrix

Figure 5.2 shows the data table for a particular roster within the costing matrix. Each monetary value is divided by the number of hours below it to give the average spent per hour on that enhancement for that banding. Therefore Cell D2 is divided by D3 to give a value of £7.58 per hour paid to a Band 7 for Saturday enhancements in that roster.

	A	B Night	C Unsocial	D Sat	E Sun	F Bank Hol	G OT
1		Night	Unsocial	Sat	Sun	Bank Hol	OT
2	Band 7	£0.00		£91.00	£151.00		
3		0		12	12		
4	Band 6	£0.00		£206.00	£233.00		
5		0		36	24		
6	Band 5	£2,245.00		£1,305.00	£2,373.00		
7		480		285	309		
8	Band 4	£315.00		£128.00	£271.00		
9		94		38	48		
10	Band 3	£545.00		£299.00	£299.00		
11		168		89	55		
12	Band 2	£622.00		£220.00	£421.00		
13		218		77	89		

Figure 5.2: Workings behind a Costing Matrix

Below is a table listing how effective each area was compared to the benchmark set by the September roster, sorted most to least effective. Effectiveness is judged by the percentage of time all the rosters produced by the e-rostering team were just as or more effective than the September benchmark by the ward manager. Therefore the percentage is the number of cells that were green and white (excluding Bank Holidays) of the total number (excluding Bank Holidays).

Ward	Effectiveness
Ward 35	79.5 %
CICU	75.9 %
Ward 27	72.7 %
Gara Ward	72.5 %
SSU	70.2 %
Ward 26	69.0 %
Ainderby	67.8 %
Ward 34	67.2 %
Ward 37	65.6 %
Ward 29	63.8 %
Accident & Emergency JCUH	63.5 %
Ward 32	61.5 %
Ward 31	60.0 %
Ward 12	58.3 %
Romanby	58.3 %
AAU	57.1 %
CCU JCUH	56.0 %
Ward 24	55.1 %
Ward 3	55.0 %
Ward 11	54.5 %
Ward 4	52.8 %
Ward 28	50.0 %
Ward 30	50.0 %
Renal Unit	50.0 %
Accident & Emergency FHN	48.7 %
Ward 6	47.6 %
Ward 9	46.8 %
Cardio Day Unit	44.4 %
Ward 36	43.9 %
MAU FHN	40.8 %
Ward 18	35.6 %

2. Roster Creation Evaluation

A snap shot of each roster was taken once it had been created and approved by the centralised rostering team and again after changes had been made by the Ward Manager and been worked. The charts (Appendix 1) show the comparison between the planned roster and the worked roster for 3 key elements, additional duty hours, % of unfilled duties and total staff unavailability.
The comparison period was from September 2011 which was the last roster produced by the ward through to April 2012 with the exception of the December roster due to this including the Christmas period. Worked roster information is only available to the end of February.
Adding additional duty hours to a roster instantly has a cost implication due to over rostering. As you will see all of the planned rosters in October showed a reduction to zero in planned additional duty hours, however every division ended up adding them into the rosters before the end of the roster period.

The % of unfilled duties is linked to the safety and effectiveness of a roster, the fewer unfilled duties, the more staff rostered to work, which is an effective use of their contacted hours. In all Divisions

the planned rosters created by the team show an improvement in the % of unfilled duties on the benchmark month of September and also highlight an increase, (in some cases by a substantial amount) once the roster has been worked.

The % of unavailability is linked to cost, safety and effectiveness, if unavailability is high, shifts could be left unfilled, which is unsafe or filled by using overtime, bank or agency which is not cost effective. Certain unavailability is difficult to manage once a roster is being worked, such as unplanned sickness and unforeseen urgent situations, but the biggest majority is planned annual leave which can be fully managed at ward level.

During the pilot the centralised team had no control over either planned unavailability or increases that happened throughout the roster period. In 62% of rosters the planned unavailability exceeded the 21% headroom set in the ward budgets, this increased to 82% once the roster had been worked. In Cardio it peaked at 39.7% unavailability in the February roster.

3. Avoidable Costs

The Avoidable Costs is a report the Healthroster system provides, looking at 3 specific areas, Additional Duty cost, Wrong Grade cost and Unused Net Hours cost. It is based on worked rosters and identifies how costs in the roster could be avoided. These figures used have been taken only from the 33 centrally rostered pilot areas.

An **additional duty** is where wards have over rostered against their budget. Reasons for this could be for high dependency patients and the G52 policy which are unavoidable costs but the majority of these over rostered shifts are due to poor management of annual leave which necessitates the addition to use up staffs contracted hours. These extra hours were added after the planned roster was approved. Any unused staff hours had been left unfilled by the centralised roster team on the planned roster with a view to redeployment of those staff. This was escalated to the divisional team to highlight that staff redeployment was an option available to them. However in most cases this did not happen, leading to this avoidable cost.

Additional Duty Cost by Division

Division	Sept	Oct	Nov	Jan	Feb
Acute	£2,338	4775.11	3932.38	£2,729	£3,111
Cardio	£6,753	7071.45	5865.02	£1,472	£2,066
Surgery	£945	1171.24	1361.58	£187	£897
Neurosurgery	£1,072	961.12	1520.28	£437	£1,073
Spec Med	£566	605.52	776.26	£2,362	£1,748
Trauma	£175	1539.61	988.84	£1,461	£1,356
Total	**11849.16**	**16124.05**	**14444.36**	**8648**	**10251**

Over the 5 month monitoring period this totalled £61,316 which means the average cost per month for over rostering is £12,263.

Wrong grade type cost is when a staff member of one grade type has been rostered to work a shift from a different grade type i.e. RN working a HCA shift. On occasions this can be a HCA working an RN shift which although is a cost effective option may not be the safest from a skill mix

perspective. Where this is the case the data has been amended so the figures only show where a more expensive staff member has been rostered from a lower grade shift allocation.

Month	Wrong Grade
September	£794
October	£549
November	£426
January	£379
February	£0
Total	**£2,148**

The average monthly cost for using more expensive staff in a lower band shift is £429.60. The encouraging factor is that this avoidable cost over the pilot period has reduced from nearly £800 per month to £0 by planning more effective rosters.
The **unused net hours cost** is calculated when not all staffs contracted hours have been utilised within the roster period. It was felt using data from that part of the report was misleading, because a large number of staff who work full time hours and 12 hour shifts will have 6 unfilled hours and are asked to carry these forward into the next roster period so an extra 12 hour shift can be added. **Month 1**, 12 x12hrs = 144hrs, **Month 2**, 13 x 12 = 156 totalling 300 hours over 2 roster periods. With this in mind the section has not been included in this report.

4.1 Use of Premium Payments during times of over allocation of annual leave

Note: All bank and agency shifts referenced to in this section were taken from the trusts record of all shifts invoiced by the relevant agencies which is stored in the trusts finance department.

One aim of the centralised rostering project was to monitor the allocation of annual leave on a weekly basis by ward and this was recorded separately for registered and unregistered staff. It has been calculated that if you have 14% of your contracted staff on annual leave at all times then there will be enough hours to allocate all staff their full year's entitlement within a 52 week period. When looking at leave granted there is an allowance for the leave to be set at anything between 12% and 16%. This allows for differences in leave entitlements granted for length of service.
If a Ward Manager is allocating annual leave unevenly throughout the year, this can have a number of knock on effects. One of the most common examples is when annual leave is allocated at a low percentage at less desirable times of the year to take leave, wards can have too many staff around at this point and may create additional duties to utilise the staff hours they have available after all required shifts have been filled. This will then have an effect at other times in the year when ward managers have to over allocate leave (above the 14% aim) in order to grant staff their full annual allocation. When ward managers grant too much annual leave they are leaving themselves short of staff if they go over the budgeted 21% total unavailability and in order to provide sufficient staffing on each shift will have to resort to additional hours, overtime or bank and agency to cover the shortfall.

For this section of the report it was highlighted by ward each week where a Ward Manager allocated annual leave over the 16% maximum threshold allowance. If a ward manager had allocated leave over the 16% allowance the difference was calculated between the weekly percentage allocated and the desired allocation of 14% and then this converted into hours worked out on the number of staff in post at the time.

For example if a ward had 19 WTE registered staff in post and they allocated 19% annual leave in one week the difference between the allocated annual leave (19%) and the desired allocation (14%)

is 5. Then to convert this into hours we would find 5% of 19 (19 x 0.05) and multiply this by 37.5 (the number of hours in a week. This results in an over allocation of 37 hours annual leave in one week. To calculate the cost of over allocation of annual leave it was then investigated if during these weeks the wards used NHSP, overtime or additional hours to fill any shifts. If a ward did use NHSP, and in this example it was only one shift at 12 hours, we would take the cost of that shift but then investigate overtime and additional hours respectively until we found the number of shifts that satisfied the number of hours to which leave had been over allocated.

In some instances where wards had over allocated leave they hadn't resorted to any of these measures to cover shifts, but where they had, an accumulated cost of £42,504.34 had been calculated. This total was for the 33 wards included in the centralised rostering project for the period 12/09/2011 to 04/12/2011. For a further 20 of the wards it also included the period 02/01/2012 – 30/01/2012. Also looking at the section on the avoidable costs report if leave had not been over allocated during these times then staff may have taken leave at other times of the year and this may have reduced the number of additional shifts created and therefore the cost of staff contracted hours via that route.

Financial synopsis of centralised rostering evaluation

It should be noted that the information of the evaluation of the centralised rostering project is collated from 6 months data from the e roster team from planned roster production and 4 months financial information based on worked rosters. The financial information for the final 6 month worked roster would not have been available for circulation until June and in order to move ahead with production of the evaluation report it was agreed by the executive programme board that the report would be collated at the earliest opportunity based on data and themes identified to date.

Finance team have provided a financial synopsis (appendix 2) which provides a monitoring summary of the 33 centrally rostered units for a 4 month period (noting that December 2011 rosters were not centrally produced).

The following commentary has been provided by the finance team to accompany the data:

Centralised rosters have been produced for the period Oct 2011 to February 2012 (excluding Dec 2011). Payments for the rosters are normally made the following month after the rosters have been worked. The table within the appendix shows the total cost differences for the period of November 2011 to February 2012 (rosters for period Oct 11 to Jan 12) compared to April to October 2011 as a benchmark. The difference for all categories equates to £11,235 which represents a reduced cost when compared to the benchmark.

Table 2 shows the costs for the period of November 2011 to February 2012 compared to the same months for the previous financial year. The difference indicates that the costs for 2011/12 (4 months) are £67,508 lower that the same period in 2010/11.

The Trust imposed a nursing agency ban (except NHSP professionals) which was enforced on 6th June 2011. In extreme circumstances the shift could be covered by non NHSP staff if prior approval was obtained by the senior contact within the division.

Notwithstanding the aforementioned qualifications provided by finance team it is acknowledged that the information presented does not recognise equalised expenditure i.e.: recognition of pay awards / incremental rises are not reflected within the comparisons therefore it would be fair to assume that any savings recognised within the presented numbers will always be understated and therefore not reflective of actual savings. It is hoped that through further detailed analysis the finance team will be able to provide these numbers in any future financial data collection.

Graphical representation of the presented numbers detailed within the synopsis is shown within appendix 3, 4, 5 and 6.

Summarising the graphical data from 2010/11 and 2011/12:

1. Enhancement spend comparison is inconclusive at this stage, however it should be recognised, as detailed above, that once the spend is equalised it is anticipated that spend in ratio terms would slightly increase.
2. Overtime spend comparison depicts real savings, again, which when equalisation is undertaken will increase.
3. Additional standard hours is identifying an increase from presented financial data, again once the numbers are equalised this will show savings against the numbers identified.
4. Agency spend comparison depicts real savings; however it should be recognised that a Trust imposed agency ban has been in place since June 2011. (This does not include NHSP) However c. £58k savings identified within finance data will again increase further when numbers have been equalised.

In all instances there is still evidence that these figures are not fully optimised due to the `tampered` centralised roster postproduction.

SECTION 3: AVOIDABLE COSTS WITHIN ALL UNITS – the information in this section has been provided by Allocate Software (system supplier)

To date, South Tees Hospitals NHS Foundation Trust has been successful in driving the adoption and implementation of Healthroster across its areas of operations. With over 100 wards and departments now live with Healthroster, this process has now provided the South Tees HFT with a rich volume of information which can be used to assist in the control of operational effectiveness in relation to how it uses its staffing resources.

The purpose of this report therefore, is to highlight some key pieces of data, review the trends in 2011 and to make recommendations as to how the organisation could use this information to drive additional benefit.

In delivering this short report Allocate have only focussed on key operational data and have not sort to document all the benefits the trust is deriving for the deployment of Healthroster. Benefits secured through the seamless integration with payroll, although a source of significant benefit, is not considered in this report.

The report covers three areas:

- Improving the quality and cost of rosters though managing *"Avoidable Cost".*
- Managing staff unavailability
- Improving clinical governance

Managing Avoidable Cost

The data suggests there is an opportunity to reduce the Trusts operational costs through performance managing the quality of the rosters. The table below shows the costs that were incurred by the Trust in excess of budget (as represented in the Templates in Healthroster); this totalled over £460k in 2011. Progress has been made however, if you combine Additional Duties and Wrong Grade types (Duties where the duty's grade type is different to the person's, e.g. RN assigned an HCA duty) then the cost has been reduced by 46% in the second half of 2011 compared to the first half. Additional Duties are analysed in more detail below.

Avoidable Cost	Jan – Mar 11	Apr – Jun 11	July – Sept 11	Sept – Dec 11	Total
Additional Duties (£)	£151,784	£94,419	£48,341	£84,703	£379,247
Wrong grade type (£)	£29,710	£20,641	£18,052	£15,277	£83,680
Total (£)	**£181,494**	**£115,060**	**£66,393**	**£99,980**	**£462,927**
Unused Hours Movement (£)	**-£14,340**	**-£67,186**	**£7,985**	**£79,960**	**£6419**

The movement in Unused Hours shows little change over the year with December 2011 balance of £104k being marginally higher than at the beginning of the year.

The biggest contributor to the avoidable cost is Additional Duties; see the graph below for the trend over 2011.

Additional Duties Value (£)
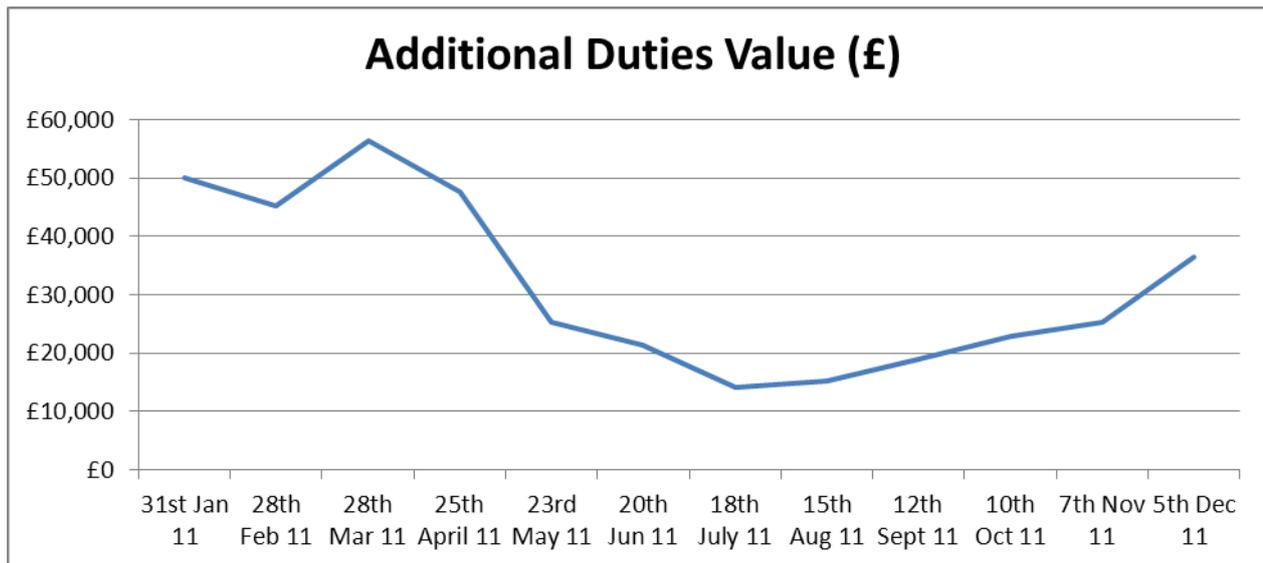
The graph shows that trust successfully managed to reduce the cost of Additional Duties over the year, the monthly cost of Additional Duties (calculated at the mid-point of the grade of the person filling the duty) have been reduced from a run rate of £50k in Jan 10 to a low of £15k in July 11 before rising towards the end of the year.

This reduction if sustained will lead to a reduction in the demand for temporary staffing as the substantive workforce are rostered onto unfilled shifts required to meet clinical demand not onto shifts created to help manage staff's contracted hours for example.

A detailed analysis of all the Additional Duties worked in 2011 shows that 1500 out of the total 4861 duties were created to use up staff hours, an average over the year of 32%, at a cost of £120k. In Allocates experience it is a likely that a material proportion of the remaining 68% will also be created for this purpose but will either have been categorised in error or incorrectly to avoid scrutiny.

It is Allocates experience that despite arguments to the contrary when trusts instigate scrutiny and control over the creation and reporting of Additional duties their usage becomes the exception and not the rule, in a number of cases the requirement has for the most part disappeared.
It is recommended that the Trust:

- Implement enhance performance management process through which Additional duties are reported on.
- Instigate a signoff procedure that takes away the ability of the Roster Creators to create and fill an Additional Duty without signoff from a senior operational manager.

Managing Staff Unavailability

NHS organisations plan for the fact that clinical staff are not going to be available for duties all of the time and build a planned level of unavailability into budgets and the clinical staffing demand templates built into Healthroster. In the case of South Tees this takes the form of an uplift of 21% resulting in a planned availability of substantive staff for clinical duties of 83% ((100/120)*100) and therefore a planned unavailability of 17%.
From Healthroster it can be seen that the actual average level of unavailability throughout 2011 was 28.5%, see the graph below for the Trend over the year and the quarter by quarter breakdown of the components of this unavailability position included as Appendix One – Unavailability 2011 Broken Down by Type.

Actual vs. Planned Unavailability 2011
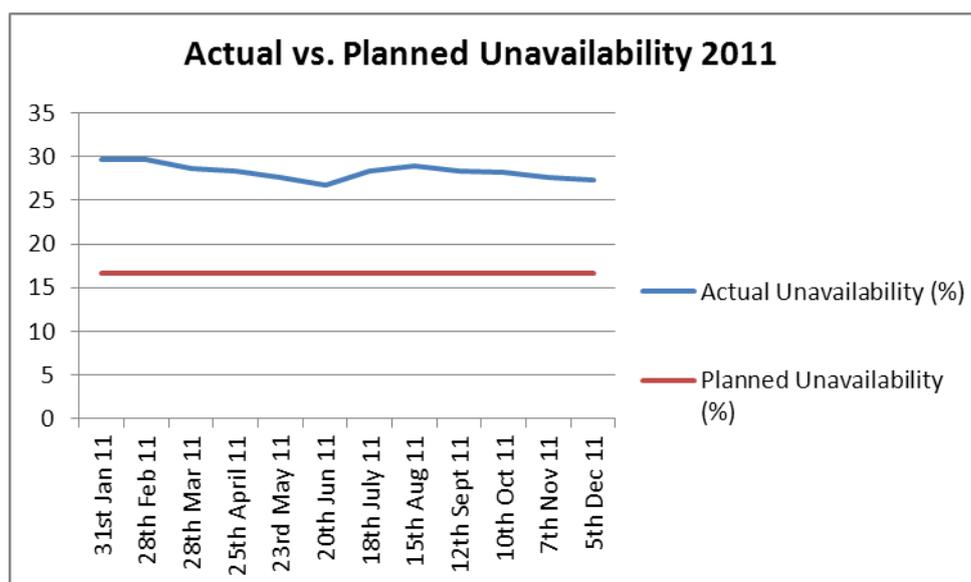
Whilst the management of unavailability (sometimes called Downtime) is a challenging subject that requires the organisation to adopt different ways of working, the rewards can be significant both in terms of financial benefit and reduced management complexity.

For an average Trust every reduction of unavailability of 1% represents an increase in productivity worth about £0.5m increase in clinical capacity that will either reduce the requirement for temporary staffing or enhanced clinical quality or a mixture of both.

An actual Unavailability level 10 to 15% higher than planned will have a real and substantial impact on the efficiency and effectiveness of the Trusts operations; it will create stress and therefore costs in the system.

There are two key conclusions that can be drawn from the graph above:
1. The unavailability position shows a slow, steady and sustained improvement
2. There is a material opportunity for Management to work with roster creators and approvers to better manage unavailability and therefore release more capacity improving quality and reducing cost.
3.

It is recommended that the Trust:

- Initiate a review on the current policy and approach to budgeting for unavailability. The current approach results in an essentially unachievable target that is so removed from the operational reality that it can't be used to help drive improvement in the system. In Allocates experience unavailability plans cluster around 22% excluding Maternity leave and 25% when this is included. This is not an issue of affordability as the Trust is incurring the costs of the actual position of an average 28% across 2011.
- Set and drive the organisation to work towards achieving a challenging but realistic Unavailability goal. If the trust was to set and achieve an actual unavailability performance of 25% this would create additional clinical capacity worth £3.5m per annum (based on an average trust with an annual rostered clinical payroll cost of £50m).
- Put in place clear accountability and performance management processes that directly address the challenge of improving productivity through reduced downtime.
  Clinical Governance
- Healthroster does not only assist organisations to focus on delivering financial benefits. It is also able to monitor that wards are rostered to the correct quality, safety and governance levels thus ensuring the appropriately qualified/competent people are rostered at the right time and the right place. The positions on Shifts with no charge cover, a key clinical

governance and quality measure, is highlighted as this demonstrates further progress being made.

	Jan 11 - Mar 11	Apr 11 - Jun 11	Jul 11 - Sept 11	Oct 11 - Dec 11
Number of Shifts with no charge cover	374	250	339	192

It is evident that across the period from January 2011 to December 2011 that there has been a significant improvement in the provision of Take Charge cover across South Tees HFT's wards and departments. Indeed, since the peak in "Shifts Without Charge Cover" percentage in Q1 of 2011, where the Shifts "Without Charge Cover" were well above the 350 level, there has been a continual improvement with only a slight blip in Q3. By Q4, the level is nearly 50% below that of Q1. The control of this key operational requirement ensures the Trusts wards are being staffed in a safer and more compliant manner. The stats for the first month of Q1 2012 also show significant improvement (down to 21) and this downward trend needs to continue to ensure that the level of shifts "Without Charge Cover" is at a manageable and acceptable level.

Summary & Conclusions of avoidable costs

South Tees Hospitals NHS Foundation Trust and the team working on the e-Rostering implementation have achieved a lot, 132 units have been rolled out delivering efficiency savings and improving quality.

Significant further benefits are available to the Trust through, the continued rollout of Healthroster, improving productivity, challenging and maintaining the quality of rosters.

Within the rostered units a further annualised saving of at least £120k is achievable through controlling additional duties created to use up staff hours.

In addition there is a gap between the planned and average unavailability time of 12.5% of the rostered payroll. This should be reviewed to understand the extent to which existing plans are addressing this opportunity to realise significant reductions in bank or agency costs or improvements in the quality and quantity of care delivered by existing resources. Where no plans exist they should be developed.

To address this opportunity it is recommended that the following action is taken:

- The Trust should develop a Rostering performance management process that established visibility of the quality and outcome of the Roster process at all levels in the organisation, consideration should be given to benchmarking ward to ward and division to division to help the organisation take ownership of realising the benefits available to them through improved Rostering.
- The Rostering performance management process recommended above should be integrated into the Trust core operational and performance management processes Senior Operational boards should be given a clear mandate and responsibility to increase the productivity and efficiency of the Rosters, including tracking and managing the quality of rosters with a particular focus on Additional Duties, Lost Time and the management of unavailability.
- The Trust should undertake a review on current policy and practice on budgeting for and managing unavailability, the current level of 17% is unrealistic and should be updated.

Unavailability 2011 broken down by type

Actual Unavailability 2011				
	Jan - Mar 11	Apr - Jun 11	July - Sep 11	Oct - Dec 11
% Annual Leave	15.0	14.9	15.9	15.2
% Sickness	6.7	5.4	5.7	5.9
% Working Day	3.1	2.8	2.6	2.8
% Study Day	1.2	1.0	0.8	1.1
% Parenting	3.4	3.5	3.6	3.7
Actual Unavailability %	29.4	27.6	28.6	28.5

SECTION 4 – THE FUTURE

Following the implementation to nursing and midwifery clinical teams over recent years there have been many requests for wider implementations to other staff groups. Not having all nursing and midwifery staff (e.g.: senior staff, community teams, specialist nurses) within the E rostering system is causing inconsistencies and additional work for some divisions as the lack of a standardised approach to all staff rostering does highlight risks to the organisation and leads to additional processes and repetition being introduced. (These areas were outside of the initial project scope of the project). It also highlights inequity in the way staff are managed from a workforce rostering point of view. The senior nursing team have requested that all nursing and midwifery staff are implemented onto the E rostering system as soon as possible.

Future implementation ambition for 2012 to 2013 is therefore geared to:

1. Full review of previous implementations to 4 community hospitals, review of flexible working, shift times, patterns and rules. Centralised rostering commenced in community hospitals from March 2012 roster.
2. Integrating all outstanding live areas with ESR/Payroll – 4 community hospitals
3. Roll out Employee On Line with outstanding live areas – 4 community hospitals
4. Rolling out e-roster, ESR/payroll / EOL concurrently to the 2 remaining H&R community hospitals plus Rutson unit at FHN
5. Rolling out e-roster, ESR/payroll / EOL concurrently to the remaining nursing / midwifery staff within the hospital settings

Resources

The Trust currently employs 3 whole time equivalent staff within the E rostering team (1 band 6 wte, 1 band 5 wte and 1 band 3 wte to administer the system and although these roles are executed extremely well (previous reviews by Allocate, and Internal Audits) there is minimal capacity for any additional further roll out. Additional recruitment to the team could lead to further implementations as detailed below:

1. Rolling out e-roster, ESR/payroll / EOL concurrently to the other staff groups (excluding medical staff)
2. Rolling out e-roster, ESR/payroll / EOL concurrently to the remaining teams within the community settings
3. Rolling out e-roster, ESR/payroll / EOL concurrently to the medical staff team

Current and ongoing services provided by the e rostering team are as follows;

- 9 to 5 support for an ever increasing user base (currently 4,300 staff)
- Provision of a system administration role
- Provision of training to new staff to the organisation – roster production training, roster updater training, roster management training, roster central training
- Provision of quarterly reviews of all units (currently 128 wards / departments / teams) to ensure system information up to date to ensure accurate data within the system to allow managers to provide safe, fair and cost effective rosters – recommendation from system supplier
- Provision of KPI management reports in relation to compliance with agreed parameters from E roster policy
- Management of system upgrades and communication of changes to staff
- Provision of ad hoc information from the system for the wider organisation
- Liaison with external supplier and other organisations using e rostering

- Ongoing support to address lack of compliance with KPI`s in many areas (in particular AL management)

Recruitment of a dedicated lead role for the ongoing management of E rostering was essential to ensure dedicated leadership for the team, system, benefits realisation, achievement of CIP linked with e rostering in divisions and ability to deliver future implementations. This post has now been recruited to.

SECTION 5: CONCLUSIONS AND RECOMMENDATIONS

The e-roster system is showing benefits as discussed previously which have been augmented by the integration with payroll. Consistency of application in terms of all staff rostering is needed to reduce potential risk and ensure fairness and equity for all staff. Further roll out to the remaining staff groups and potentially to the rest of the organisation in the future will support staff with ongoing efficiency savings plans.

In summary, implementation of e rostering has:

- facilitated better management of staff hours
- automatically rostered correct skill mix
- facilitated creation of fair rosters
- reduced staff costs
- ensured accurate payroll
- reduced the administration burden for some ward areas and payroll
- provided accurate and clear visibility of staff hours worked / owed / owing
- provided clear, immediate and accurate management reports related to staff – sickness, training time, clinical competence, AL taken / left, requests, unavailability, restrictions to working patterns
- provided staff access to the system via EOL giving each staff member the availability to request leave, study time, annual leave and also allowing them clear records of their study record, leave record, sickness etc
- ensured a standardised approach to rostering is implemented across nursing and midwifery teams
- ensured compliance with EWTD

The evaluation of the centralised rostering report has highlighted total actual savings identified in the financial synopsis section. (page 9)

It should be noted at this point that had management of changes to rosters post production also been undertaken in line with policy by the centralised team then both actual savings from the project and potential future savings applied to all units would have led to a potential further increase in savings.

- Rosters produced by the central team were just as or more effective than the September benchmark by the ward manager as detailed within the report.

- In all Divisions the planned rosters created by the team show an improvement in the % of unfilled duties on the benchmark month of September and also highlight an increase, (in some cases by a substantial amount) once the roster has been worked, which indicates that more duties were filled and therefore this may have impacted on the slightly increased enhanced hours payments identified in the financial data. It is hoped that the reduction in NHSP spend is as a result of the increased use of staff hours and better fill rate of duties by the central team.

- Creation of additional duties in the planned rosters was reduced to zero by the central team however once the rosters were worked managers created additional duties on most occasions "to use up staff hours". Over 5 of the 6 months monitoring period this totalled £61,316 which means the average cost per month for over rostering is £12,263.

- Management of annual leave remains a huge issue for the organisation and in some instances where wards had over allocated leave they hadn't resorted to covering shifts

(patient safety concern) but where they had, an accumulated cost of £42,504.34 had been calculated. This total was for the 33 wards included in the centralised rostering project for the period 12/09/2011 to 04/12/201. Compliance with policy in relation to management of Annual Leave is essential for divisions to address as this is impacting on finances but also on patient safety in ensuring we have the right people in the right place with the right skills at all times.

- As identified in the Allocate software report section there is still additional work to be undertaken to ensure more effective roster management and the recommendations identified by Allocate Software are fully supported in terms of performance management and review of headroom % within the organisation. Work has commenced to link the e rostering system with the Performance Management system and this will feed into the Divisional quarterly reviews for 2012/13.

Progress April 2012 to date;

An evaluation report was shared and presented to FMG in relation to the evaluation of centralised rostering and also in relation to the benefits realisation from E rostering to date. Formal Management group supported the plan to extend centralised rostering to 35 units where potential savings could be made. Formal Management Group agreed to recruit to 4 additional Band 2 posts to produce centralised rosters. The Band 2 posts would be supported by the current team who could then extend e rostering to other staff groups.

Centralised rostering
Performance management

- Top 35 units identified for centralised rostering based on:
  Higher use of NHSP, OT and extra hours for part time staff
- Current meetings being held with ward managers to review templates / rules / patterns etc
- Shadow rosters being produced with all flexible working removed to share with divisions the impact of flexible working
- Monthly divisional performance management reports drafted and shared with Divisional Managers and to be produced monthly from July
- Quarterly divisional high level performance data charts drafted and will be reviewed in quarterly performance meetings
- Meeting held with PAO lead Catherine Reed to discuss project and inputting of key data
- Meetings held with finance to agree finance indicators which will be measured to demonstrate the savings from this project – finance team to visit Darlington Trust to discuss with their finance team their finance indicators
- Team will start first rosters from July (September roster)

Additional cost avoidance and factors to be considered

In addition it should be noted that Allocate software recommended in their review of e rostering that the trust:

- Initiate a review on the current policy and approach to budgeting for unavailability. The current approach results in an essentially unachievable target that is so removed from the operational reality that it can't be used to help drive improvement in the system. In Allocates experience unavailability plans cluster around 22% excluding Maternity leave and 25% when this is included. This is not an issue of affordability as the Trust is incurring the costs of the actual position of an average 28% across 2011. – meetings currently being held to

undertake a piece of work in relation to headroom allowance for nursing and midwifery teams (Alison Smith, Andrew Thacker, Helen Borg and Kath Elliott)

- Set and drive the organisation to work towards achieving a challenging but realistic Unavailability goal. If the trust was to set and achieve an actual unavailability performance of 25% this would create additional clinical capacity worth £3.5m per annum (based on an average trust with an annual rostered clinical payroll cost of £50m).
- Put in place clear accountability and performance management processes that directly address the challenge of improving productivity through reduced downtime – will commence from July's performance meetings (as highlighted above)

NHSP

- **Lack of link to NHSP interface remains a risk to this project as there is no correlation between the vacant duties in the roster and requests for NHSP – process to purchase this is currently taking place**

NB: As discussed at the beginning of this briefing paper the initial business case paper presented to BoD in 2006, when the decision was taken to introduce this system, identified that cost releasing benefits would be realised from:

- Reduction in bank costs
- Reduction in agency costs
- Reduction in overtime and extra hour's spend

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
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

Appendix 1 – roster creation comparisons

Acute Medicine

Additional Duty Hours

% Unfilled Duties

Unavailability

Surgery

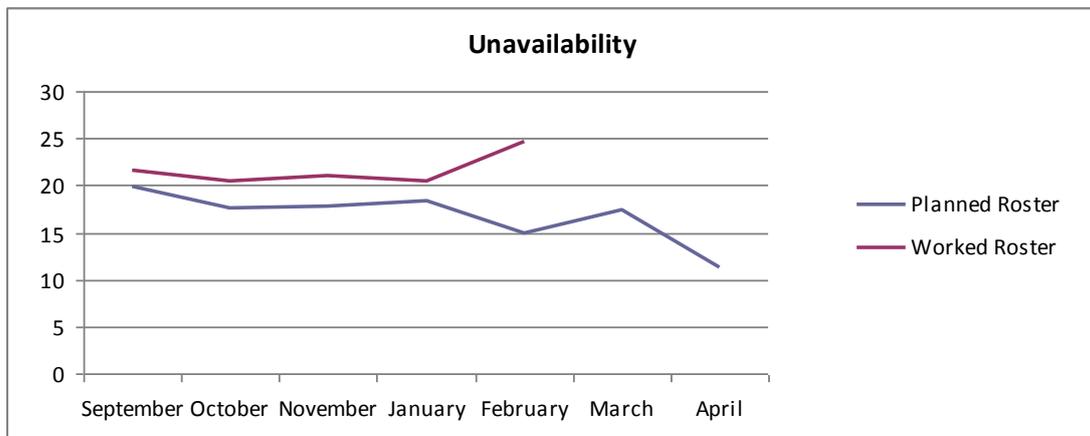### Additional Duty Hours

Legend: Plaaned Roster, Worked Roster

X-axis: September, October, November, January, February, March, April
Y-axis: 0, 20, 40, 60, 80, 100, 120, 140, 160

% Unfilled Duties

Legend: Planned Roster, Worked Roster

X-axis: September, October, November, January, February, March, April
Y-axis: 0.00, 5.00, 10.00, 15.00, 20.00, 25.00

Unavailability

Legend: Planned Roster, Worked Roster

X-axis: September, October, November, January, February, March, April
Y-axis: 0, 5, 10, 15, 20, 25, 30

Specialty Medicine

Additional Duty Hours

% Unfilled Duties

Unavailability

Neurosurgery

Additional Duty Hours

Legend: Planned Roster, Worked Roster

(Y-axis: 0, 50, 100, 150, 200; X-axis: September, October, November, January, February, March, April)

% Unfilled Duties

Legend: Planned Roster, Worked Roster

(Y-axis: 0, 2, 4, 6, 8, 10; X-axis: September, October, November, January, February, March, April)

Cardiothoracics

Additional Duty Hours

% Unfilled Duties

Unavailability

Trauma

Additional Duty Hours

Legend: Planned Roster, Worked Roster

X-axis: September, October, November, January, February, March, April

Y-axis: 0, 50, 100, 150, 200

% Unfilled Duties

Legend: Planned Roster, Worked Roster

X-axis: September, October, November, January, February, March, April

Y-axis: 0, 2, 4, 6, 8, 10, 12, 14, 16

Unavailability

Legend: Planned Roster, Worked

X-axis: September, October, November, January, February, March, April

Y-axis: 0, 5, 10, 15, 20, 25, 30, 35

Appendix 2: Financial Information

E-Roster Financial Monitoring Summary 2011/12 - 33 Pilot Wards

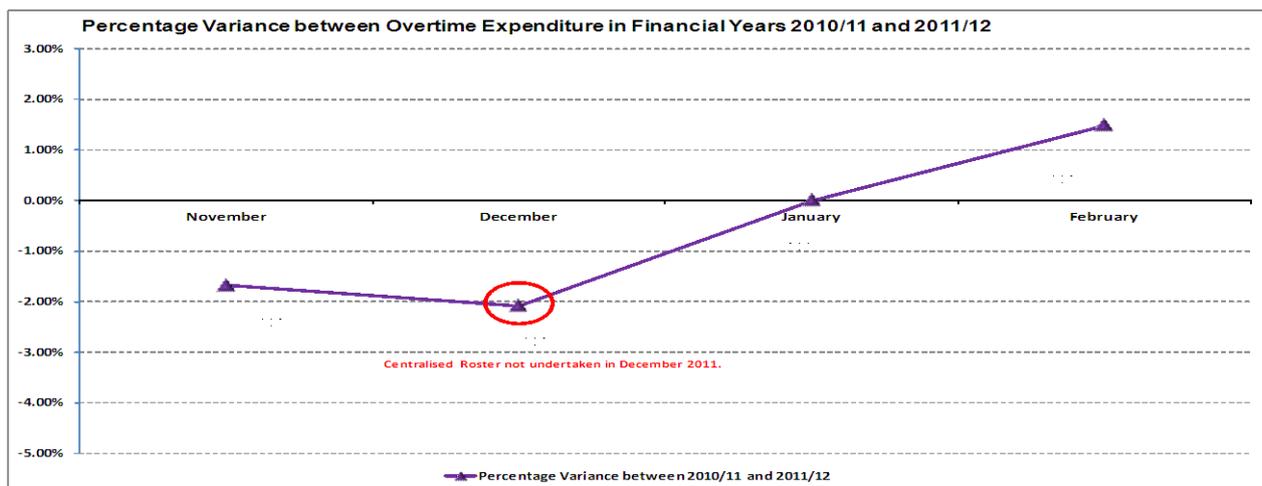| Table 1	Apr - Oct'11 Total Cost £'s	Apr - Oct'11 Average Cost £'s	Differences from October-11 average				
			Nov-11 £'s	Dec-11 £'s	Jan-12 £'s	Feb-12 £'s	Total £'s
Enhancement	3,179,967	454,281	5,716	-42,981	38,002	26,944	27,681
Overtime	291,460	41,637	-422	-4,314	-14,976	10,519	-9,193
Additional Standard Hours	91,340	13,049	1,630	1,144	-1,512	1,808	3,071
Agency	598,500	85,500	-3,872	3,832	-14,558	-18,197	-32,793
Total	4,161,266	594,467	3,053	-42,319	6,957	21,075	-11,235

Table 2	2010/11 - Actual Costs					2011/12 Actual Costs					
	Nov-10 £'s	Dec-10 £'s	Jan-11 £'s	Feb-11 £'s	Total £'s	Nov-11 £'s	Dec-11 £'s	Jan-12 £'s	Feb-12 £'s	Total £'s	Diff £'s
Enhancement	453,022	404,869	489,592	493,015	1,840,498	459,997	411,300	492,283	481,225	1,844,805	4,307
Overtime	53,231	48,842	26,643	45,984	174,701	41,215	37,323	26,661	52,156	157,355	-17,345
Additional Standard Hours	14,714	13,149	10,781	13,134	51,778	14,678	14,193	11,537	14,857	55,265	3,487
Agency	100,145	86,152	74,022	106,844	367,163	81,628	89,332	70,942	67,303	309,206	-57,957
Total	621,113	553,012	601,038	658,978	2,434,140	597,519	552,148	601,423	615,541	2,366,632	-67,508

Appendix 3

South Tees Hospitals **NHS**
NHS Foundation Trust

E-Roster Financial Analysis

Percentage Variance between Overtime Expenditure in Financial Years 2010/11 and 2011/12

Centralised Roster not undertaken in December 2011.

Percentage Variance between 2010/11 and 2011/12

Overtime Expenditure	November	December	January	February
Financial Year 2010/11	£ 53,231	£ 48,842	£ 26,643	£ 45,984
Percentage of Total Monthly Expenditure Financial Year 2010/11	8.57%	8.83%	4.43%	6.98%
Financial Year 2011/12	£ 41,215	£ 37,323	£ 26,661	£ 52,156
Percentage of Total Monthly Expenditure Financial Year 2011/12	6.90%	6.76%	4.43%	8.47%
Percentage Variance between 2010/11 and 2011/12	-1.67%	-2.07%	0.00%	1.50%

Note:
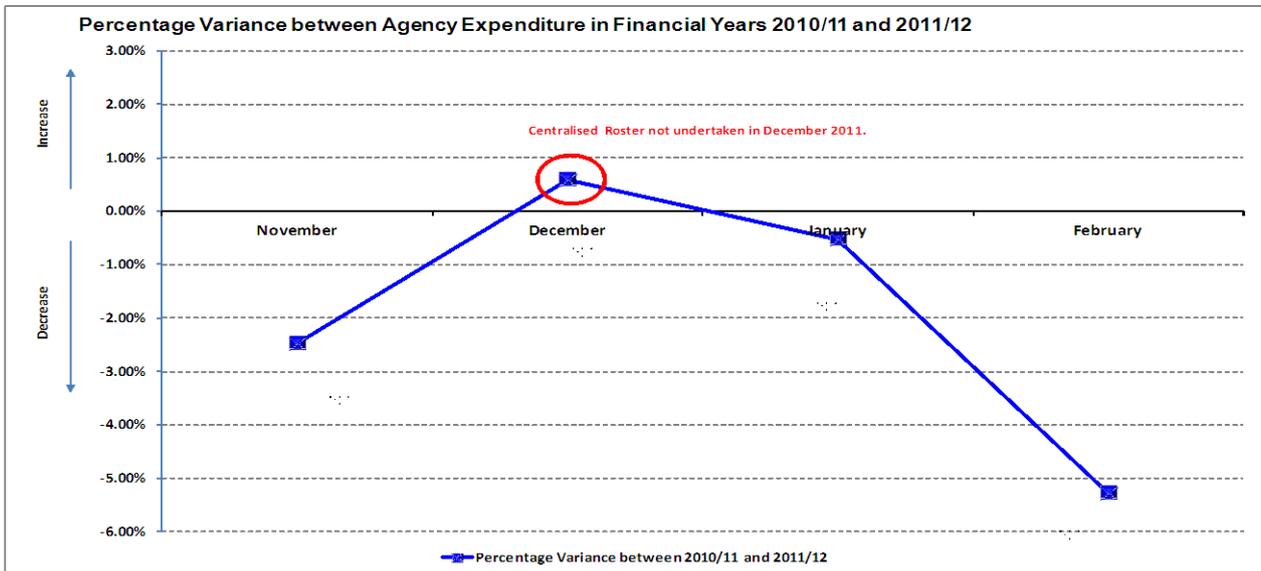Expenditure has not been equalised, hence no reflection of pay awards / incremental rises in 2011/12 figures

Appendix 4

South Tees Hospitals **NHS**
NHS Foundation Trust

E-Roster Financial Analysis

Percentage Variance between Enhancement Expenditure in Financial Years 2010/11 and 2011/12

Centralised Roster not undertaken in December 2011.

—Percentage Variance between 2010/11 and 2011/12
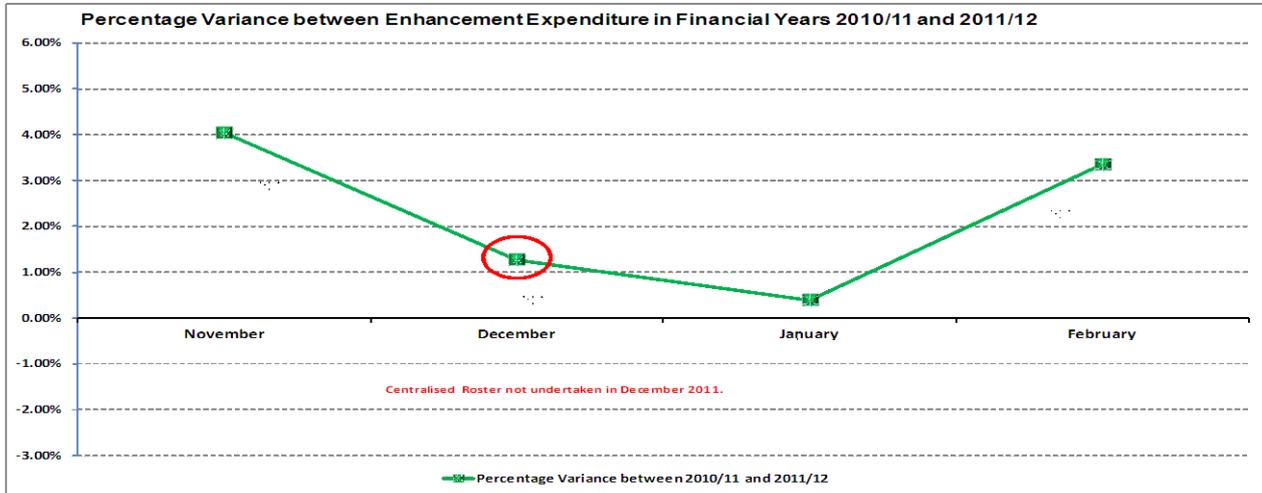
Enhancement Expenditure	November	December	January	February
Financial Year 2010/11	£ 453,022	£ 404,869	£ 489,592	£ 493,015
Percentage of Total Monthly Expenditure Financial Year 2010/11	72.94%	73.21%	81.46%	74.82%
Financial Year 2011/12	£ 459,997	£ 411,300	£ 492,283	£ 481,225
Percentage of Total Monthly Expenditure Financial Year 2011/12	76.98%	74.49%	81.85%	78.18%
Percentage Variance between 2010/11 and 2011/12	4.05%	1.28%	0.40%	3.36%

Note:
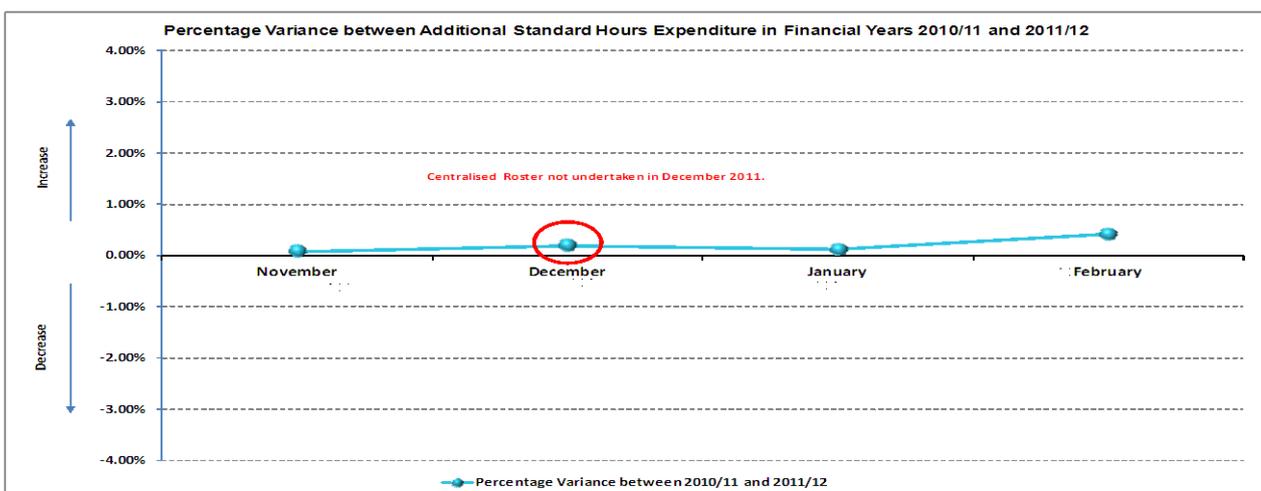Expenditure has not been equalised, hence no reflection of pay awards / incremental rises in 2011/12 figures

Appendix 5

South Tees Hospitals NHS
NHS Foundation Trust

E-Roster Financial Analysis

Percentage Variance between Agency Expenditure in Financial Years 2010/11 and 2011/12

Agency Expenditure	November	December	January	February
Financial Year 2010/11	£ 100,145	£ 86,152	£ 74,022	£ 106,844
Percentage of Total Monthly Expenditure Financial Year 2010/11	16.12%	15.58%	12.32%	16.21%
Financial Year 2011/12	£ 81,628	£ 89,332	£ 70,942	£ 67,303
Percentage of Total Monthly Expenditure Financial Year 2011/12	13.66%	16.18%	11.80%	10.93%
Percentage Variance between 2010/11 and 2011/12	-2.46%	0.60%	-0.52%	-5.28%

Note:
Expenditure has not been equalised, hence no reflection of pay awards / incremental rises in 2011/12 figures

Appendix 6

South Tees Hospitals NHS
NHS Foundation Trust

E-Roster Financial Analysis

Percentage Variance between Additional Standard Hours Expenditure in Financial Years 2010/11 and 2011/12

Additional Standard Hours Expenditure	November	December	January	February
Financial Year 2010/11	£ 14,714	£ 13,149	£ 10,781	£ 13,134
Percentage of Total Monthly Expenditure Financial Year 2010/11	2.37%	2.38%	1.79%	1.99%
Financial Year 2011/12	£ 14,678	£ 14,193	£ 11,537	£ 14,857
Percentage of Total Monthly Expenditure Financial Year 2011/12	2.46%	2.57%	1.92%	2.41%
Percentage Variance between 2010/11 and 2011/12	0.09%	0.19%	0.12%	0.42%

Note:
Expenditure has not been equalised, hence no reflection of pay awards / incremental rises in 2011/12 figures