The Shrewsbury and Telford Hospital NHS Trust

Paper 11iv

Reporting to:	**Quality & Safety Committee**
Title	Nursing Establishment Review - August 2017
Sponsoring Director	Director of Nursing, Midwifery and Quality
Author(s)	Julie Lloyd - Quality Manager Helen Jenkinson - Deputy Director of Nursing and Quality
Previously considered by	Workforce Committee
Executive Summary	The paper outlines the approach to 6 monthly review of ward nursing establishments against patient acuity and dependency. It includes the actions that are occurring at an organisational level to support and improve nurse staffing and maintain patient safety and Quality of Care. It outlines variances in required versus actual registered nurse staffing levels and makes recommendations for improvement.
Strategic Priorities	
1. Quality and Safety	☒ Reduce harm, deliver best clinical outcomes and improve patient experience. ☒ Address the existing capacity shortfall and process issues to consistently deliver national healthcare standards ☒ Develop a clinical strategy that ensures the safety and short-term sustainability of our clinical services pending the outcome of the Future Fit Programme ☒ To undertake a review of all current services at specialty level to inform future service and business decisions ☒ Develop a sustainable long term clinical services strategy for the Trust to deliver our vision of future healthcare services through our Future Fit Programme
2. People	☒ Through our People Strategy develop, support and engage with our workforce to make our organisation a great place to work
3. Innovation	☒ Support service transformation and increased productivity through technology and continuous improvement strategies
4 Community and Partnership	☐ Develop the principle of 'agency' in our community to support a prevention agenda and improve the health and well-being of the population ☐ Embed a customer focussed approach and improve relationships through our stakeholder engagement strategies
5 Financial Strength: Sustainable Future	☐ Develop a transition plan that ensures financial sustainability and addresses liquidity issues pending the outcome of the Future Fit Programme
Board Assurance Framework (BAF) Risks	☒ If we do not deliver **safe care** then patients may suffer avoidable harm and poor clinical outcomes and experience ☐ If we do not work with our partners to reduce the number of patients on the **Delayed**

	Transfer of Care (DTOC) lists, and streamline our internal processes we will not improve our 'simple' discharges. ☐ Risk to **sustainability** of clinical services due to potential shortages of key clinical staff ☐ If we do not achieve safe and efficient **patient flow** and improve our processes and capacity and demand planning then we will fail the national quality and performance standards ☐ If we do not get good levels of **staff engagement** to get a culture of continuous improvement then staff morale and patient outcomes may not improve ☒ If we do not have a clear **clinical service vision** then we may not deliver the best services to patients ☐ If we are unable to resolve our (historic) shortfall in **liquidity** and the structural imbalance in the Trust's **Income & Expenditure** position then we will not be able to fulfil our financial duties and address the modernisation of our ageing estate and equipment
Care Quality Commission (CQC) Domains	☒ Safe ☒ Effective ☒ Caring ☒ Responsive ☒ Well led
x☐ Receive ☐ **Review** ☐ **Approve** ☐ **Note**	**Recommendation**

Contents

Executive Summary

This nursing establishment review included in this paper is from data 1st August - 30th August 2017 and was undertaken for all inpatient ward areas excluding Maternity and Paediatric services.

During the review, the **Allocate Ltd** - **SafeCare Projec**t was in the early stages of implementation. Thus, both **SafeCare** and **Patient status at a Glance (PSAG)** software were used as data sources to inform this paper. Both systems are aligned to allow registered nursing staff to capture patient numbers by Patient Acuity and their Dependency using the nationally recognised AUKUH (Shelford 2014) acuity model; referred here on in as the Safer Nursing Care Tool (SNCT).

NB: It is envisaged that recent inclusion of a new 'Assessment Multiplier' within the Safer Nursing Care Tool (SNCT) will capture the rapid change in patient acuity and dependency that occurs within emergency departments. This will enable future reviews to include evaluation of nursing workforce within these environments. Due to the timing of this data submission analysis from admission areas have not been subject to application of the assessment multiplier and as such should be viewed with caution.

The SCNT is widely used by NHS Trusts as the basis and multiplier for calculation to capture evidence of how nursing care is delivered (***see table 1***). To ensure data quality and consistency at SaTH, scoring criteria and guidance is available within all ward areas, and live data is validated periodically by senior nursing staff.

The SNCT multiplier allows reporting of Care Hours per Patient Day (CHPPD). The Carter report (2016) argues that CHPPD gives a more accurate view of the availability of staff and overcomes limitations of the fixed staff ratio approaches by describing both the staff required and staff available in relation to the number of patients. CHPPD is calculated by adding the hours of registered nurses to the hours of healthcare support workers and dividing the total by every 24hours of in-patients.

SafeCare uses 12hrly census periods (07:00 and 19:00) to calculate if staffing levels meet acuity and dependency demand. It is anticipated that once implemented throughout the Trust, SafeCare should enable clear visibility of Trust wide staffing issues to inform day-to-day staffing movements as well as advise longer-term resource and establishment plans enabling SaTH to progress from fixed staff ratios. Allocate propose that future version releases of the SafeCare software will provide more frequent census periods up to 12 times every 24hours to better capture fluctuations in patient acuity.

At the time of this report, only wards using SafeCare software can readily demonstrate a graphical representation of substantive, nursing bank and agency usage **(see section 9)**. Full rollout of SafeCare will be completed by 1st December 2017 and future use of different models (multipliers) for different specialities such as paediatrics will enhance its application. Maternity services will use Birth rate plus (BR+). Analysis of BR+ is beyond the scope of this paper.

Please Note :

- This review was undertaken prior to the bed re-alignment at Princess Royal Hospital.
- The paper looks at August Data – the number of beds open on both sites since August has significantly increased therefore this paper does not present an accurate representation of the current situation
- At the end of August extra wards and extra beds, including the practice of ' Boarding' (the placement of additional patients in a non allocated bed space) was undertaken and whist the decision to do this was underpinned by risk assessment, this issue increased number of patients dependent on Medical and Nursing Staff
- There has been an increase in Nurse vacancies since August
- There has been a cease of the use of Tier 5 Agency Nurses on October 23rd 2017 resulting at times in gaps in the Nursing workforce
- The continued dependency on agency nurses and care staff creates inconsistencies in patterns of care and whilst we are unable to directly link this to increased number of incidents on our wards we believe this to be as a direct result of reduced time to complete incident forms, based on this anecdotal feedback it is our intention to follow this up with a 'Deep Dive' approach in wards and units.
- There is limited ability to oversee and monitor ward to board nurse sensitive indicators as the existing dashboard is not sophisticated and does not allow easy interpretation of the data. A proposal to upgrade is in the process of development and support will be sought to complete the upgrade project.

In summary, the data is taken and analysed at a point in time and will serve as a more current benchmark position of nurse staffing by which future establishment reviews will be compared. This data should be viewed through a retrospective lens.

TABLE 1 SNCT summary of criteria / CHPPD

Acuity Level	CHPPD	Criteria
Level 0	4.34 /hrs/day	Patient requires hospitalisation Needs met by provision of normal ward care
Level 1a	6.10/hrs/day	Acutely ill patients requiring intervention or those who are UNSTABLE with a GREATER POTENTIAL to deteriorate
Level 1b	7.55/hrs/day	Patients who are in a STABLE condition but are dependent on nursing care to meet most or all of the activities of daily living
Level 1c	7.55/hrs/day	Patient has cognitive impairment and requires specialised one-to-one care to prevent further harm / injury. Patient has deteriorating/compromised single organ system and has complex drug regimens or requires more intensive monitoring
Level 2	8.65/hrs/day	May be managed within clearly identified/designated beds, requiring resources with the required expertise and staffing level OR may require transfer to a dedicated level 2 unit
Level 3	26.16/hrs/day	Patients needing advanced respiratory support and/or therapeutic support of multiple organs

For further detail of criteria and guidance see appendix 1

1. Introduction

Trusts have a duty to ensure safe staffing levels are in place and patients have a right to be cared for by appropriately qualified and experienced staff in a safe environment. These rights are enshrined within the National Health Service (NHS) Constitution, and the Health and Social Care Act (2012) which make explicit the Board's corporate accountability for quality.

The Nursing and Midwifery Council (NMC) sets out nursing responsibilities in relation to safe staffing levels and demonstrating safe staffing is one of the essential standards that all health care providers must meet to comply with Care Quality Commission (CQC) regulation. This is also incorporated within NICE guidelines, 'Safe Staffing for nursing in adult inpatient wards in acute hospitals' (2014), NHS England guidance 'A Guide to Care Contact Hours' (2014); which additionally recommends inclusion of contact time by registered nursing staff in establishment reviews. Registered nurse contact time is referred to from here on in as 'nurse hours per patient day' (NHPPD) as opposed to CHPPD.

2. Purpose

This nursing establishment review was undertaken for the following reasons: -

- To provide establishment data that will inform the Trust: To comply with Care Quality Commission requirements under the Essential Standards of Quality and Safety, including outcomes 13 (staffing) and 14 (supporting staff).
- To support the implementation of the Trust's strategic objectives for Nursing and Midwifery

It is essential to provide assurance both internally to the Trust and externally to stakeholders that ward establishments are safe and staff can provide appropriate levels of care to patients that reflect the Trust values and the National Nursing Strategy (2016), as well as the Director of Nursing, Midwifery and Quality. This is particularly important in the light of key recommendations made by the Francis Report (2013), the Berwick Report (2013) and the National Quality Board publication (2013) 'How to ensure the right people, with the right skills are in the right place at the right time – A guide to nursing, midwifery and care staffing capacity and capability' in terms of safe ward staffing levels and 'Operational productivity and performance in English NHS acute hospitals: Unwarranted variations' (Carter Report 2016).

3. Data collection

Staffing data was collated with patient acuity data by measuring the patients' acuity and comparing with the actual registered (RN) and un-registered care staff (HCA's) on duty. Any missing acuity scores were substituted with acuity level '0' for the purpose of data collection. Therefore, such data is **likely to be inaccurate**. The Safer Nursing Care Tool (2014) methodology recommends that patient, staffing and patient flow information is collected over a minimum of 20-days. This methodology was used to inform this review. However, in recognition that acuity of patients within ward environments is unlikely to reduce at weekends; data capture for this review was undertaken over a 30-day period to include weekend trends as well as weekdays.

Excluded from the analysis were supervisory shifts undertaken by ward mangers, student nurses and supernumerary staff. Although ancillary support staff such as ward clerks and housekeeping staff are also omitted; the absence of such a workforce and its impact on direct care hours available for patient care is acknowledged. For those areas using SafeCare the absence of ancillary staff may be recorded as an 'additional task'. The extent and significance for the Trust will be measured upon full roll out of SafeCare.

Table 2. Safe care additional tasks

Task	Time Allocated
Assessment to ED	Min 30 mins
Cover for housekeeper	Min 30 mins
Cover for ward clerk	Min 30 mins
CPR	Min 30 mins
Escort to endoscopy	Min 30 mins
Escort to theatre	Min 30 mins
Escort to x-ray/MRI/CT	Min 30 mins
External escort	Min 30 mins
Inter-ward transfer	Min 30 mins
Spinal injury log roll	Min 30 mins

Time allocated to each task can be extended incrementally by 30-minute time intervals

Although, during August; the review was undertaken during periods of high escalation. Ward 21SD was reopened as an escalation area and further efforts to support patient flow resulted in increased bed

capacity to accommodate additional patients on several wards. Risk assessments for additional patients nursed in unorthodox bed locations during the review period are noted as: -

- Scheduled care; 21 additional patients
- Unscheduled care; 88 additional patients

However, the length of time these patients remained in such locations cannot be determined from available data.

4. Staffing V's patient experience

The impact of nursing and care staff capacity and capability on the quality of care experienced by patients and on patient outcomes has been well documented; with multiple studies linking low staffing levels to poorer patient outcomes and increased mortality rates (RCN 2017). Needleman et al (2002) publication was one of the first to identify measures or 'nurse sensitive indicators' reflecting the structure, processes and outcomes of nursing care. These have been adopted locally and adapted overtime. **Table 3** displays nurse sensitive indicators for the period under review for SaTH.

Table 3 Nursing sensitive indicators Aug 2017

MRSA Bacteraemia.	0
MSSA Bacteraemia	3
C.diff (post 72 hr)	1
Non Elective MRSA Screening	89%
Catheter Associated Urinary Tract Infection	3
VIP Scores	5%
Grade 3 or 4 PU	1
Grade 2 PU (unvalidated)	21
VitalPAC - % of obs on time	72%
Number of falls	77
Number of falls resulting in serious harm	1
Medication errors	19
Nursing appraisal completion	89%
Statutory Safety Update (stat training)	74%
Sickness absence	5.06%
Blood Transfusion Training Compliance	65.11%
RaTE ward self-assessment score	53%
Safeguarding Referrals	3
Same Sex Accommodation Breaches	0
Complaints (number raised in the month)	21
RaTE patient experience score	67%
Friends and family test score	92.5
Number of responses	1777

Response rate	36%

5. Bed occupancy

The optimal bed occupancy to enable patient flow should be 85% (NICE 2017). During review, available data suggests Trust wide average bed occupancy was 92% with seven areas noted to have bed occupancy greater than 99% **(See Table 3)**. These were specifically wards 25G (Scheduled care) and wards 4, 16, 17, 22A, 22S, 24E and 28N (Unscheduled care). However, it is notable that due to Semahelix limitations (Patient administration system) any additional patients are excluded from the data below.

Table 4 Bed occupancy beds at 08:00 hrs - Aug 2017.

Name		
PRH Ward 14 Gynaecology	354	**87.84%**
PRH Ward 8 Head & Neck	395	**91.01%**
PRH Hyper Acute Stroke Unit	138	**63.59%**
PRH Acute Medical Unit	587	**78.90%**
PRH Ward 10	807	**92.97%**
PRH Ward 11	546	**62.90%**
PRH Acute Stroke Unit Ward 15	541	**96.95%**
PRH Stroke Rehab Ward 16	557	**99.82%**
PRH Ward 17	860	**99.08%**
PRH Ward 4	834	**99.64%**
PRH Ward 6	602	**97.10%**
PRH Ward 7	852	**98.16%**
PRH Ward 9	877	**97.55%**
RSH Ward 22A	615	**99.19%**
RSH Ward 22S	618	**99.68%**
RSH Ward 22 T&O	859	**95.55%**
RSH Ward 23 Oncology/Haem	915	**98.39%**
RSH Ward 24C Cardiology	368	**98.92%**
RSH Ward 24E Endocrinology	369	**99.19%**
RSH Ward 25CR	611	**98.55%**
RSH Ward 25G	555	**99.46%**
RSH Ward 26S	551	**98.75%**
RSH Ward 26U	551	**98.75%**
RSH Ward 27R	1160	**95.95%**
RSH Ward 28 Nephrology	1044	**99.05%**
RSH Ward 32 Short Stay Medical	728	**97.85%**
RSH Ward 33 Surgical ShortStay	680	**95.37%**
RSH Ward 34 SAU	445	**84.44%**
RSH Acute Medical Unit 29	479	**96.57%**
RSH Short Stay Day Surgery	230	**46.56%**

6. Limitations of the review - Patient Flow information

It is recommended that patient flow information be included in nursing establishment analysis. However, other than acknowledgement to patient throughput, there is little guidance how this should be incorporated into data analysis. As such, the accompanying care hours dedicated to accommodating admissions, discharges and transfers has not affected data analysis.

Table 5 and Table 6 summarise details of patient flow for each ward area during August.

Table 5. Patient entries to the ward

Ward	Admissions in to ward	Transfers in to ward	Entries to Ward
RSH Acute Medical Unit 29 (SAMU)	706	172	878
PRH Acute Medical Unit (TAMU)	677	44	721
RSH Ward 34 SAU (34)	346	147	493
RSH Ward 33 Surgical ShortStay (33)	118	290	408
RSH Ward 32 Short Stay Medical (32SS)	9	243	252
RSH Ward 28 Nephrology (28N)	4	241	245
PRH Ward 14 Gynaecology (14WS)	96	113	209
PRH Ward 10 Frail/Complex (WD10)	127	73	200
PRH Ward 8 Head & Neck (8HN)	93	97	190
PRH Ward 11 Gastro (WD11)	58	132	190
RSH Ward 26U (26U)	12	168	180
RSH Ward 27R (27R)	13	165	178
PRH Hyper Acute Stroke Unit (HASU)	140	22	162
PRH Acute Stroke Unit Ward 15 (WD15)	26	127	153
RSH Ward 26S (26S)	3	146	149
RSH Ward 23 Oncology/Haem (23OC)	49	98	147
RSH Ward 22 T&O (22TO)	123	23	146
PRH Ward 9 (WD9)	7	130	137
RSH Ward 25CR (25CR)	0	133	133
PRH Ward 4 T&O (WD4)	10	118	128
RSH Ward 25G (25G)	4	124	128
PRH Ward 7 (WD7)	2	121	123
RSH Short Stay Day Surgery (SSDS)	12	109	121
RSH Ward 24C Cardiology (24C)	11	90	101
PRH Ward 6 (WD6)	13	84	97
RSH Ward 24E Endocrinology (24E)	2	88	90
RSH Coronary Care Unit (CCU)	26	63	89
PRH Ward 17 H&N/Elective Ortho (WD17)	0	80	80
RSH Ward 22S (22S)	1	79	80
RSH Ward 22A (22A)	3	68	71
PRH Coronary Care Unit (TCCU)	15	36	51
PRH Stroke Rehab Ward 16 (WD16)	0	34	34

Table 6. Patient departure from the ward

Ward	Discharges from ward	Transfers out of ward	Departing From Ward
RSH Acute Medical Unit 29 (SAMU)	108	763	871
PRH Ward 24 Delivery (M24)	36	749	785
PRH Acute Medical Unit (TAMU)	97	596	693
RSH Ward 34 SAU (34)	192	308	500
RSH Ward 33 Surgical ShortStay (33)	213	202	415
RSH Ward 32 Short Stay Medical (32SS)	190	63	253
RSH Ward 28 Nephrology (28N)	121	125	246
PRH Ward 14 Gynaecology (14WS)	160	44	204
PRH Ward 10 Frail/Complex (WD10)	106	85	191
RSH Ward 26U (26U)	141	42	183
PRH Ward 11 Gastro (WD11)	139	41	180
PRH Ward 8 Head & Neck (8HN)	117	62	179
RSH Ward 27R (27R)	128	49	177
PRH Hyper Acute Stroke Unit (HASU)	61	110	171
PRH Acute Stroke Unit Ward 15 (WD15)	94	59	153
RSH Ward 26S (26S)	85	65	150
RSH Ward 22 T&O (22TO)	88	61	149
RSH Ward 23 Oncology/Haem (23OC)	134	15	149
PRH Ward 9 (WD9)	97	38	135
RSH Short Stay Day Surgery (SSDS)	108	26	134
RSH Ward 25CR (25CR)	104	30	134
RSH Ward 25G (25G)	88	44	132
PRH Ward 4 T&O (WD4)	68	60	128
PRH Ward 7 (WD7)	66	60	126
RSH Ward 24C Cardiology (24C)	68	29	97
RSH Ward 24E Endocrinology (24E)	64	29	93
PRH Ward 6 (WD6)	58	34	92
RSH Coronary Care Unit (CCU)	41	45	86
RSH Ward 22S (22S)	39	45	84
PRH Ward 17 H&N/Elective Ortho (WD17)	56	23	79
RSH Ward 22A (22A)	44	28	72
PRH Coronary Care Unit (TCCU)	26	21	47
RSH ITU (ITU)	9	27	36
PRH Stroke Rehab Ward 16 (WD16)	22	13	35
RSH HDU (HDU)	5	29	34
PRH Intensive Therapy Unit (TITU)	4	24	28

7. EPS usage

Patients requiring enhanced care (EPS) are particularly challenging in that they require a lot of resource to keep them safe. EPS can be used for patients who could be considered unsafe to be left unattended, for example; those who are at risk of falls and/or who have severe or serious cognitive behavioural issues. Enhanced care can include 1:1 in which the patient requires complete 24hour supervision to keep them safe or 1:2 where it has been assessed that one nurse can care for two patients in the same location. Such patients may be recorded as SCNT level 1c against agreed criteria **(appendix 1)**. A risk assessment is completed for each patient requiring EPS and continued need is monitored on a shift by shift basis. It is common practice at SaTH to cohort such patients wherever possible to minimise cost.

It is impossible to forecast the number of patients requiring enhanced care to support their needs. Considering previous EPS usage *n* =284 shifts for the same 30-days in Aug 2016 it is clear that there is an increase in the requirement for EPS (24 shifts). **This increase is predominantly due to a single patient on ward 24 who required EPS for a significant number of shifts throughout August.** Meaning on any one day during the review period, there was an average of ten HCA's specifically employed to provide EPS within the areas included in this review (fig 4.1) Please see fig 4.2 as a comparison for the same period last year.

Fig. 7.1 EPS usage Aug 2017 (n=308)

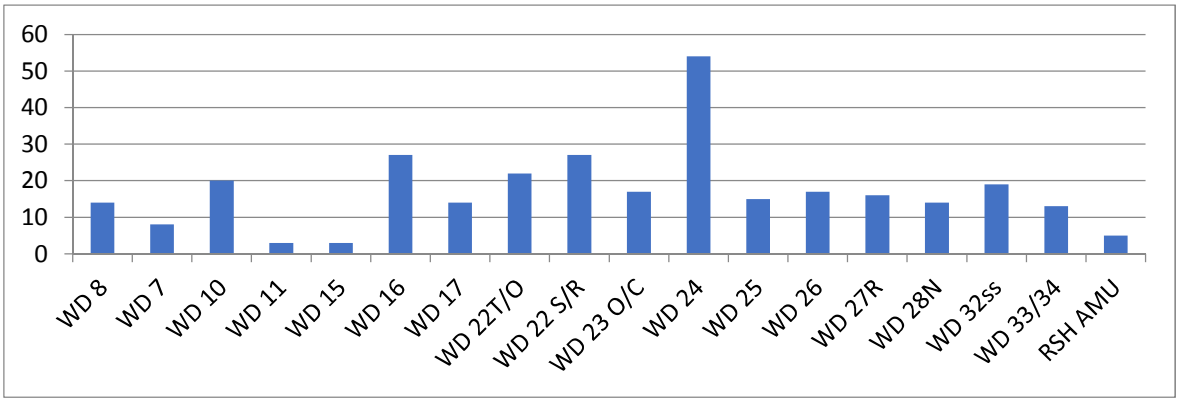
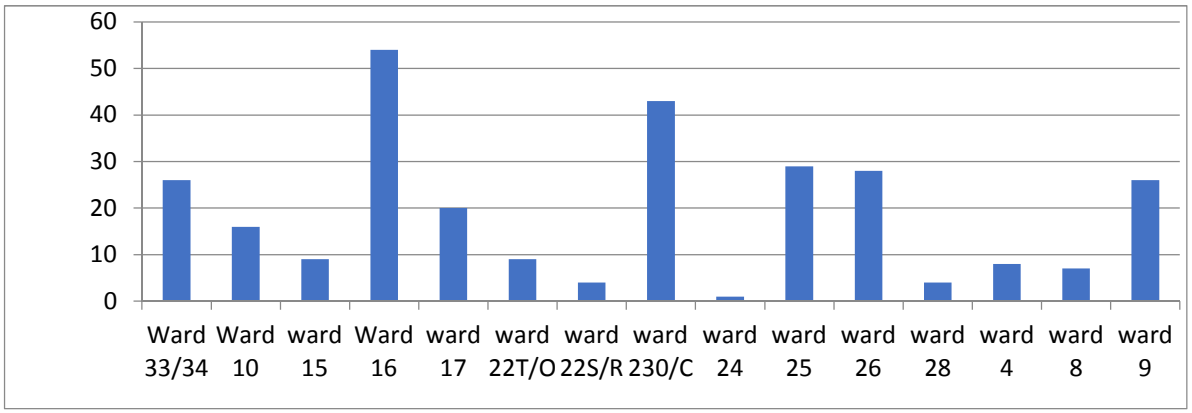


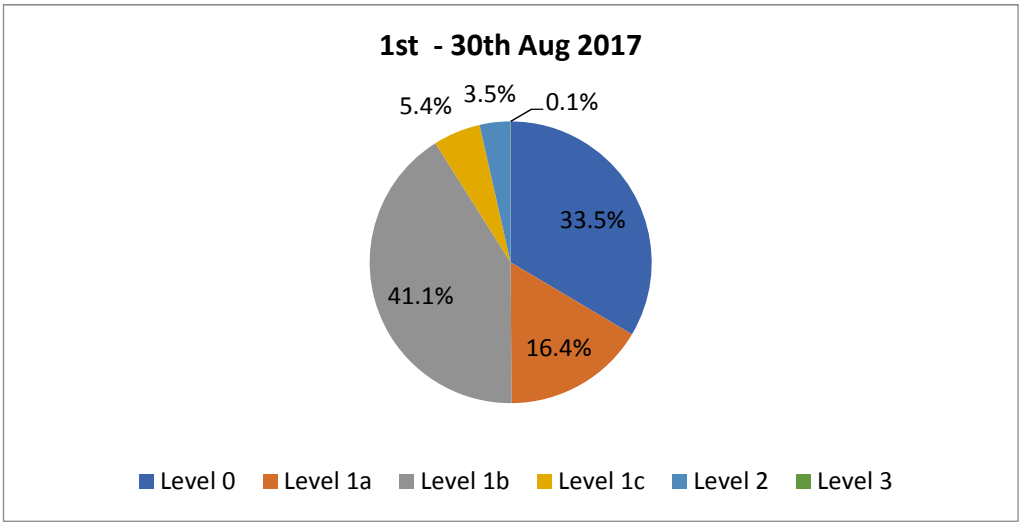
Fig. 7.2 EPS usage Aug 2016 (n=284)



8. SCNT levels

During the review period 5.4% patients were noted as level 1c requiring CHPPD of 20.72/hrs/day. ***Table 8*** indicates most patients (41.1%) have an SCNT score of '1b' and are dependent upon 7.55 CHPPD.

Table 8. Percentage of patients with associated acuity levels (1st Aug – 30th Aug)



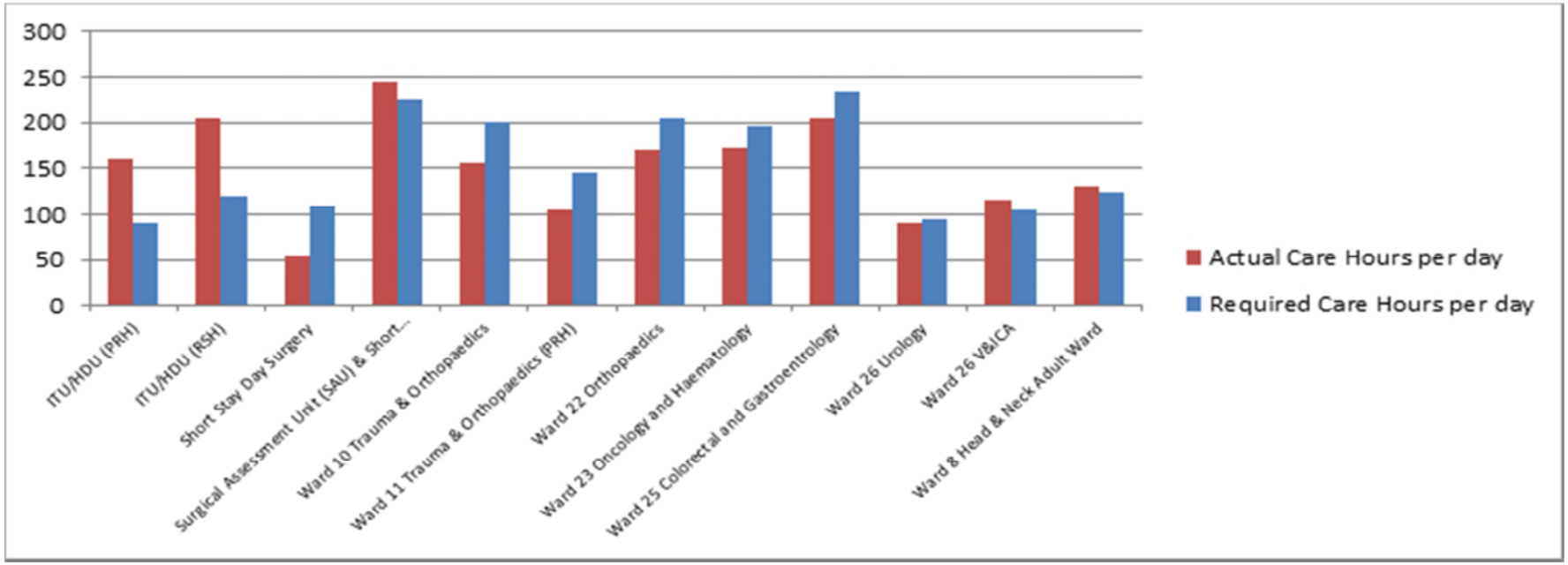
9. Staffing V's Acuity during the review period – Data analysis

The funded establishment figures taken from E-roster are for registered nurses and healthcare assistants, all other staff which includes ancillary staff, student nurses and supernumerary staff are not considered in calculating CHPPD. Managerial shifts undertaken by the ward manager have not been included in available CHPPD as these shifts would be to provide supervisory support to the clinical area. However, Ward Managers and Matrons have stated that clinical shifts are increasingly uncovered, taking the staffing levels to below the staffing template agreed by the Trust Board, in line with national guidance. This has meant that the Ward Manager worked clinically for a high percentage of the time as opposed to supervisory, but this has not always been reflected in the E-roster, and where they do work clinically "the shift is then cancelled if unfilled". The probable impact is: slowing of patient journey, increased patient length of stay, creating limited ability to forward plan rosters, reduced appraisal rates, impact on mandatory and statutory training and failure to teach and develop new staff.

NB: The variation between the funded establishment and actual hours is not the vacancy figure. The variation between funded establishment and required WTE would be the recommended staffing based upon patient numbers and acuity at that time. However, it should be noted the actual CHPPD can only reflect a point in time at which the data is gathered (07:00 and 19:00). Therefore, it is not aspirational to meet a specific level of CHPPD by using data gathered twice daily, but rather to reflect upon what is provided to the patient based upon the acuity and the number of staff available.

Table 9.1 and Table 9.2 below demonstrate the recommended CHPPD actual versus required CHPPD for Scheduled and Unscheduled Care respectively.

Table 9.1: Recommended CHPPD V's Actual CHPPD <u>Scheduled</u> care Aug 2017

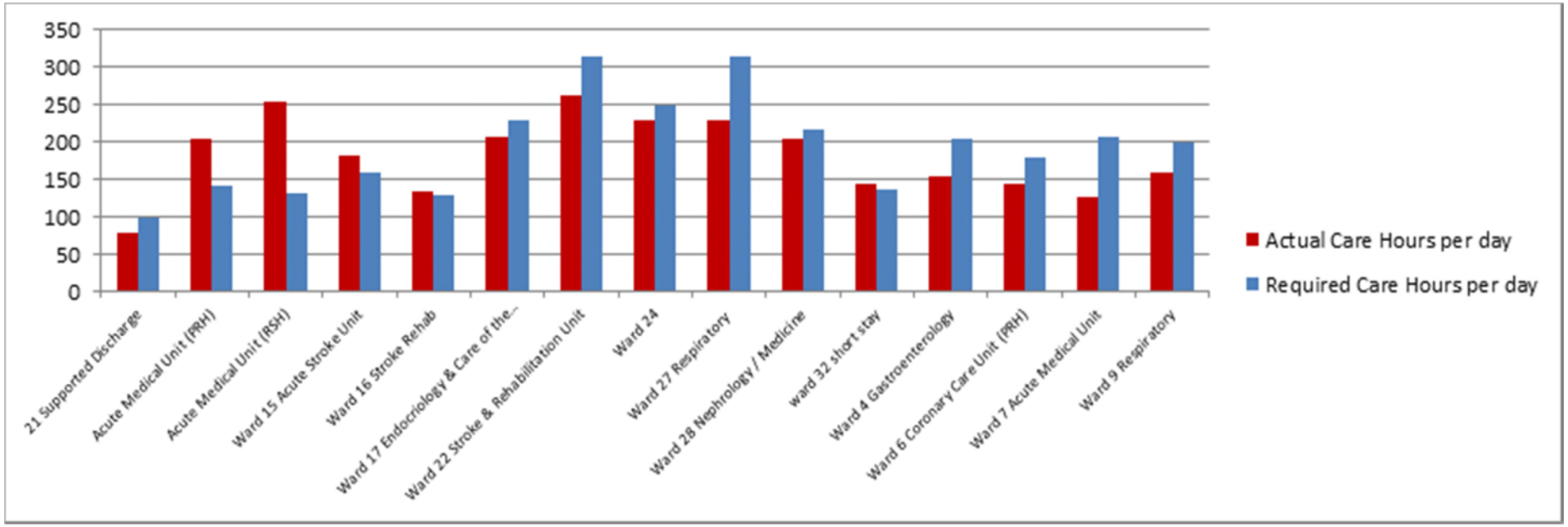


The three areas within Scheduled Care where the actual CHPPD is higher than the required CHPPD are noted as ITU/HDU (PRH and RSH) and SAU (wards 33/34). ITU/HDU had periods of reduced patient dependency throughout August. During such periods it is routine practice to temporarily relocate staff allocated to ITU/HDU to other areas on site. During August staff were moved predomenently to ED.

SAU (33/34) is the Scheduled Care emergency portal with upredictable levels of admissions and where actual and required care hours can fluctuate frequently throughout the day/week. It is envisaged that as SafeCare is implemented, such admission areas will use the 'Assessment Multiplier' to better capture the rapid change in patient acuity and throughput. In addition, E-roster incorrectly included 7.5 RN hours per day which should have been excluded during 10:00 – 18:00 as this staff member is required for Ambulatory Clinic and therefore not available to

nurse patients on the ward. Even so, evidence suggests clinic hours are often extended until the early hours of the morning sometimes closing as late as 05:00hrs.In all other areas within Scheduled Care the required CHPPD were consistently lower than actual CHPPD.

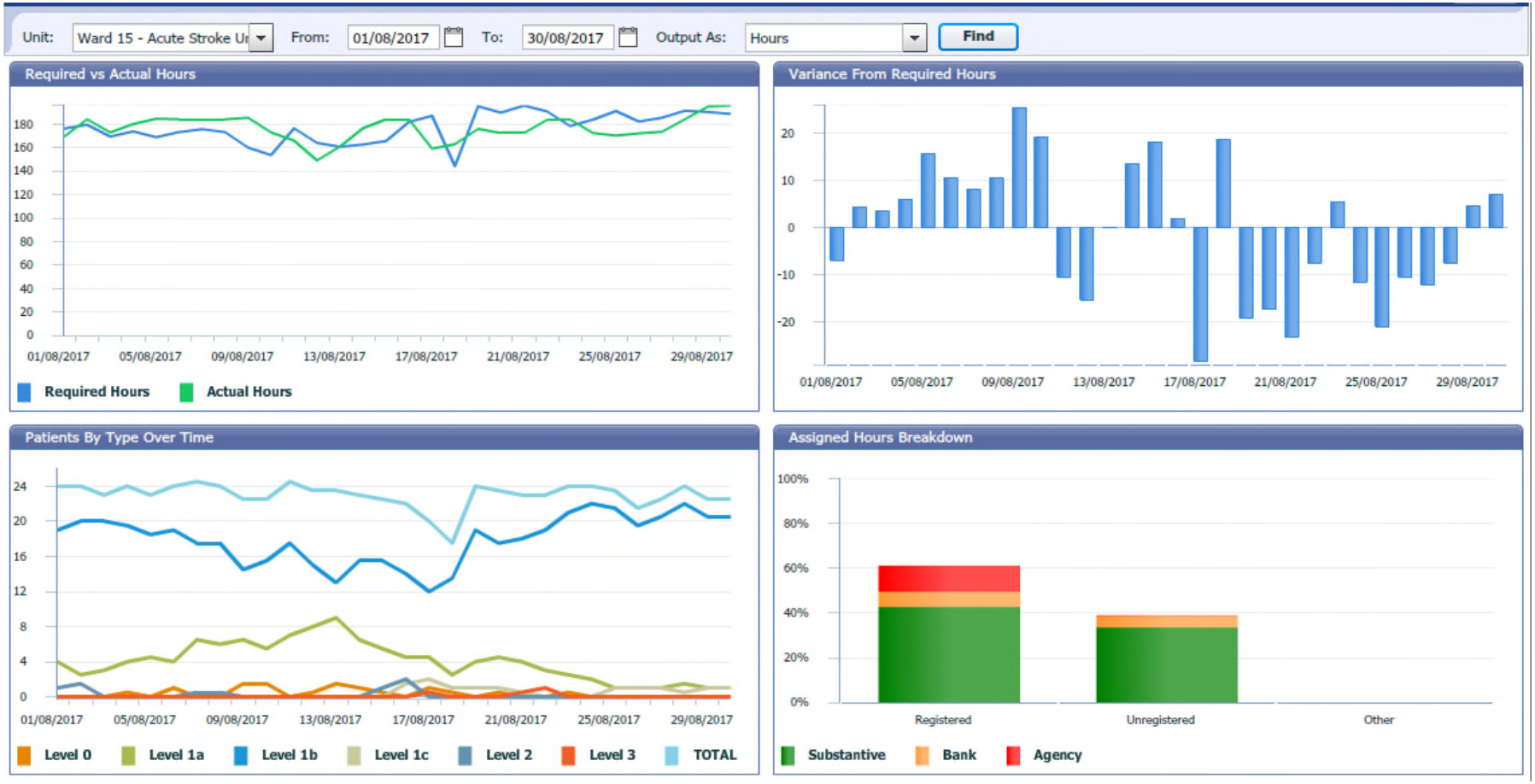
Table 9.2 Recommended CHPPD V's Actual CHPPD <u>Unscheduled</u> care Aug 2017



The four areas within Unscheduled Care where the actual CHPPD is higher than the required CHPPD are noted as AMU (both PRH and RSH), ward 15 and less significantly ward 16. Both AMU's and ward 15 are areas that accomodate medical emergency admissions and similarly to SAU have unpredictable numbers of admissions and fluctuating levels of patient acuity and demand. Again, included in the data for AMU are staff required to care for patients within the Ambulatory Clinic areas. Notably – two RN's and one HCA during the day at RSH (37.5 hrs) and one RN during the night (11.5hrs). Similar practice is noted at PRH (one RN 11.5hrs and one HCA 11.5hrs). Ward 15 offer a 24 hr 7-day thrombolysis service meaning that out of hours the bleep is carried by a member of ward staff but this practice has not been refelcted in E-roster. In all other areas within Unscheduled Care the required CHPPD were consistently lower than actual CHPPD. Ward 16 have a small bedbase such conseuquences for data analysis is discussed later in recommendations and conclusion (pp23).

SafeCare analysis: SafeCare allows for greater depth of analysis, this may be in part due to inclusion of additional tasks (**table 2. pp7**) representing a reduction of care hours (CHPPD) available for direct patient care. Such detailed information has not been available in previous establishment reviews. Using SafeCare software the actual staffing hours have been taken from the E-roster and have been broken down to substantive Trust staff and bank and agency. For example, see **Figure 10.1** – Ward 15 (Unscheduled care) and **Figure 10.2** – Ward 25 (Scheduled Care).

Fig 10.1 – Ward 15 Unscheduled Care



Ward 15 – SafeCare analysis: 1. Required V's Actual hours 2. Variance from required hours 3. Patients by type over time 4. Assigned hours breakdown. NB: Significant downward trends in the above graph are due to missing census data.

Fig 10.2 – Ward 25 Scheduled Care

Ward 25 – SafeCare analysis: 1. Required V's Actual hours 2. Variance from required hours 3. Patients by type over time 4. Assigned hours breakdown. NB: Significant downward trends in the above graph are due to missing census data.

10. Nursing Establishment

Wards and units are funded at 20.5% uplift to allow for annual leave, other leave, sickness and study days. An additional 2% maternity leave is held centrally, meaning contracted figures include temporary posts to cover maternity leave thus, using a fixed ratio model may incorrectly imply some areas appear over-established.

Trust wide sickness absence was reported as 5.06% during August, sickness is managed through the Sickness Absence Policy in conjunction with HR and monitored through operational performance review.

Table 11. RN and HCA vacancies August 2017

	Band 5 & 6 Vacancies in SC, USC				**Band 2 & 3 Vacancies in SC, USC**		
	M5 Substantive WTE Budget	**M5 Substantive WTE Contracted**	**M5 Vacancies WTE**		**M5 Substantive WTE Budget**	**M5 Substantive WTE Contracted**	**M5 Vacancies WTE**
Scheduled Care	478.24	413.85	64.39	**Scheduled Care**	214.42	189.46	24.96
Unscheduled Care	433.76	343.54	90.22	**Unscheduled Care**	263.42	248.28	15.14
Total	912	757.39	154.61	Total	**477.84**	**437.74**	**40.1**

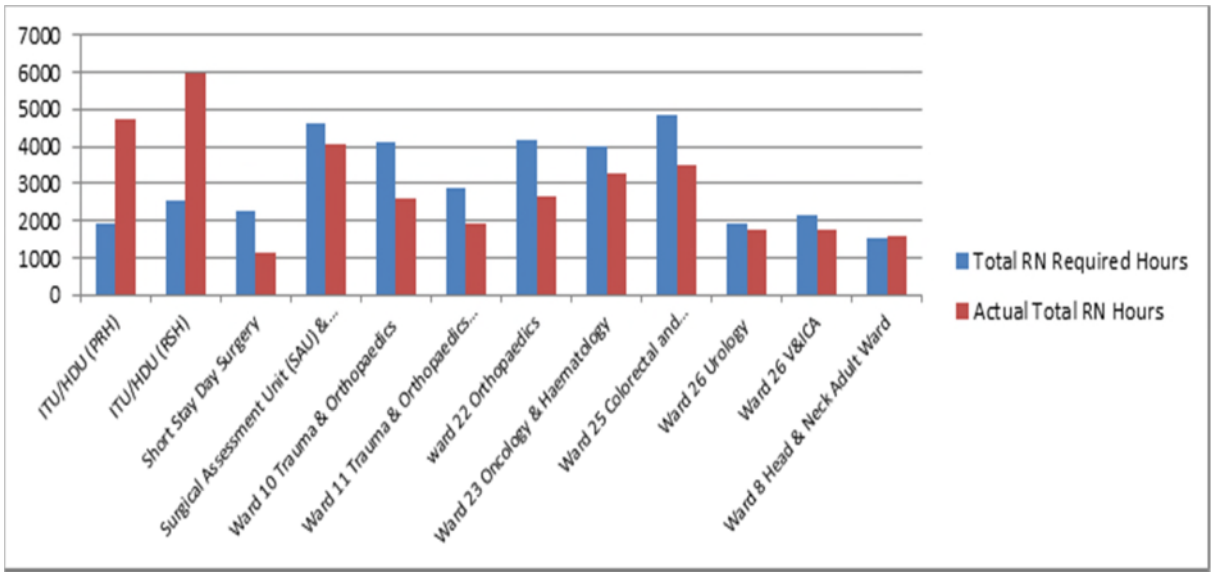
Investment in nurse staffing has previously been agreed. Vacancies do present an on-going risk to patient care, in England the number has doubled within the last three years (RCN 2017). Staffing resource is managed shift by shift on a risk based assessment by senior nurses to ensure safety in accordance with the escalation procedure that is displayed on every ward.

The Trust has faced significant challenges over the last 12 months particularly in relation to recruitment and retention of nursing staff. Although much work has been accomplished, there is an on-going need to ensure the acuity and dependency of patients and the nature and volume of activity is matched with the right number and skill mix of staff to ensure patient safety and quality is maintained.

There is clear evidence that sufficient numbers of registered nurses lead to improved patient outcomes, reduced mortality rates and increased productivity (including that of enhancing patient flow). However, recruitment, staff retention and ongoing nursing shortage impacts workforce supply subsequently across the UK skill mix is being diluted by substitution with unregistered care staff (RCN 2017).

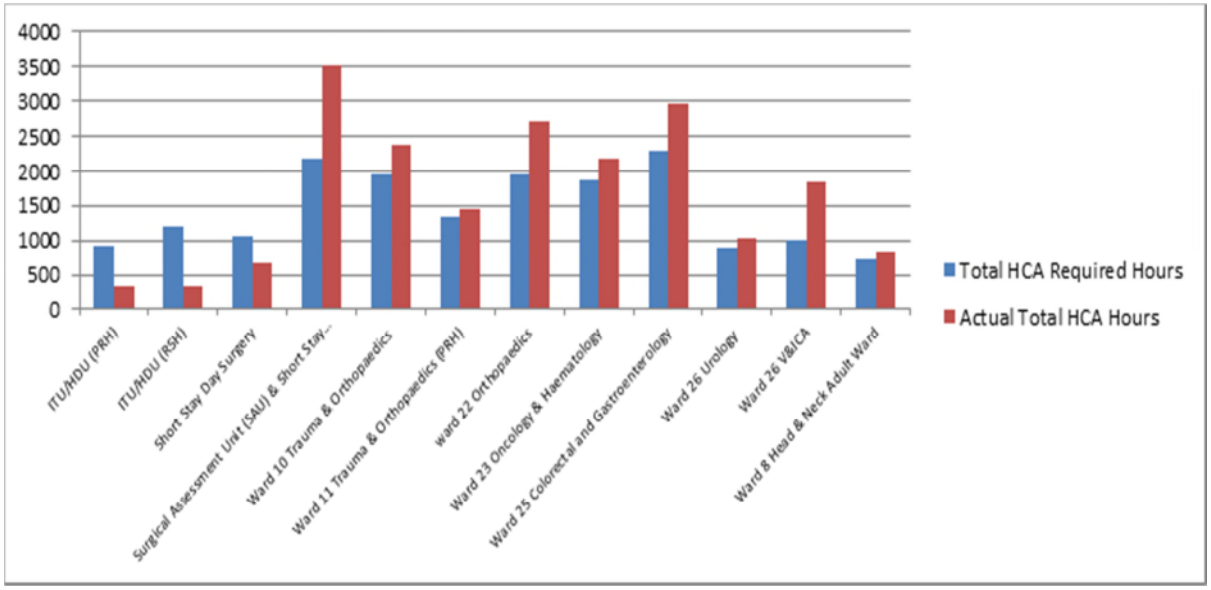
The overall RN fill rate for SaTH during August was 94% across Scheduled and Unscheduled Care wards. Nevertheless, it should be recognised that the difference between the funded split of registered nurse (RN) and healthcare assistant (HCA) is different to the actual split because of RN unavailability due to a variety of reasons including maternity leave. This is demonstrated in **tables 12.1 to 12.4 below.**

Table 12.1 shows the total required registered nurse (RN) hours during the review (1st Aug – 30th Aug) in comparison with the actual registered nurse hours (NHPPD) for Scheduled care



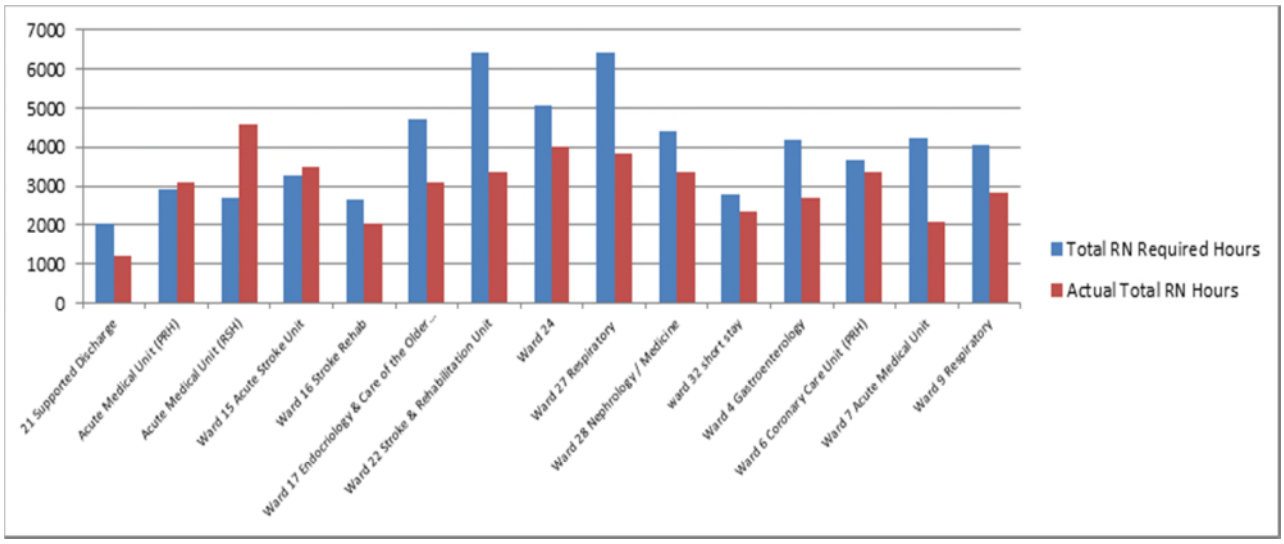
The two areas within Scheduled Care where actual NHPPD are higher than required are ITU/HDU (RSH/PRH) and SAU (33/34). As patient dependency was low within ITU/HDU registered nurses were redeployed to other areas. For SAU the figures include 7.5 RN hours required to care for patients within the Ambulatory care clinic which has falsely inflated the actual NHPPD.

Table 12.2 shows the total required unregistered (HCA) hours during the review (1st Aug-30th Aug) in comparison with the actual HCA hours for Scheduled care.



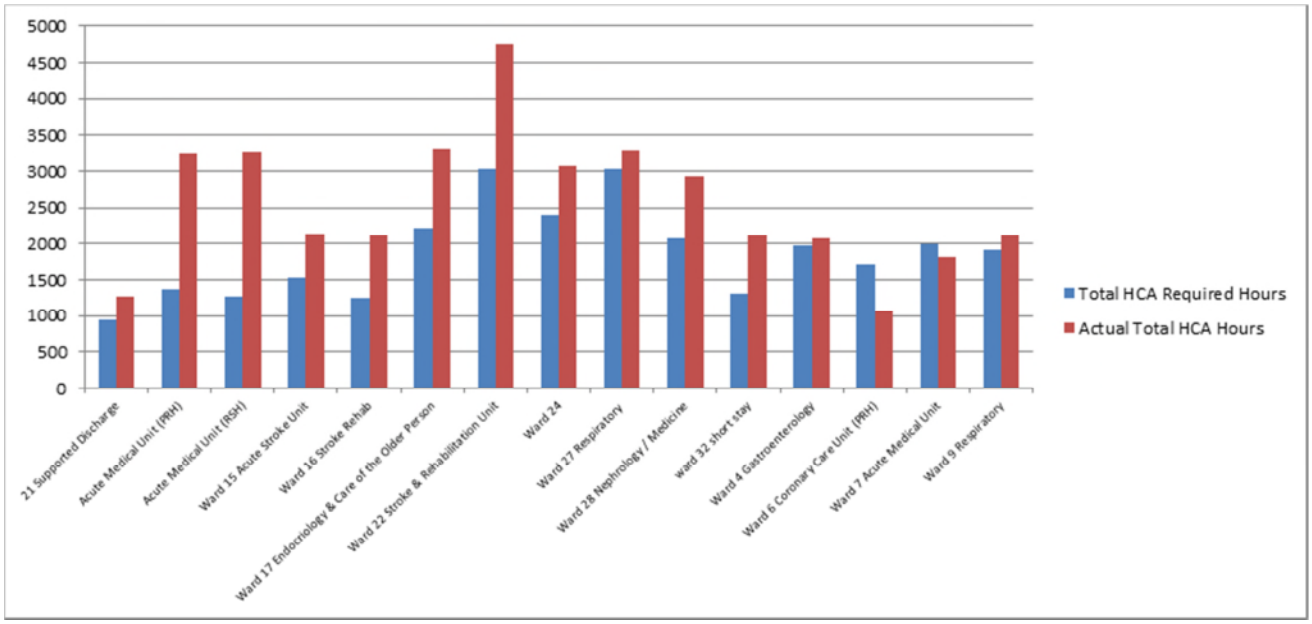
SAU actual HCA hours are higher than required due to patient escalation into clinic. All other areas within Scheduled Care are due to the requirement to support 1:1 care and skill mix change to cover RN shortfalls.

Table 12.3 shows the total required registered nurse hours during the review (1st Aug – 30th Aug) in comparison with the actual registered nurse hours (NHPPD) for Unscheduled care



The three areas within Unscheduled Care where the actual NHPPD is higher than the required NHPPD are noted as AMU (both PRH and RSH) and ward 15. However, included in the NHPPD data for AMU's are staff required to care for pateints within the Ambulatory Clinic areas. Notably – two RN's and one HCA during the day at RSH and one RN during the night. Similar figures are noted at PRH. Ward 15 NHPPD includes one RN as a bleep holder for ED admissions. Again this will have influnced the data to suggest there are greater actual NHPPD and therefore must be a relection of reality. E-roster has been amended from Feb 25th 2018 so that these staff will be excluded from any data capture. In all other areas within Unscheduled Care the required NHPPD were consistently lower than actual CHPPD.

Table 12.4 Required unregistered nurse hours during August in comparison with the actual registered nurse hours (NHPPD) for Unscheduled care



The actual HCA hours are higher in both AMU's in part influenced by the E-roster anomaly but also due to escalation and increased number of in-patients into the ambulatory clinics and corridors, where patients are nursed for extended periods and require care from a Nurse or HCA - CDU at RSH.

Areas where the actual HCA hours are above the required hours are due to the requirement to provide daily alterations in the skill mix needed to cover the failure to fill Registered Nurse shifts. It is not unusual for a HCA to be used in place of a Nurse thus shifting the ratio to a 50:50 and working outside national guidance in acute areas **(See Appendix 2).**

11. Recommendations and conclusion

This review has included the CHPPD as recommended by Carter within the model hospital; this has facilitated informed judgement and recommendation with regards the actual care that is being provided to what is required based upon the acuity of the patient. However, the use of SCNT to calculate CHPPD is not without its limitations. It is recognised that the smaller the bed-base the more inaccurate required CHPPD may be. As example, a small bed-base may accommodate patients with a low aggregated acuity, indicating minimal requirement of CHPPD, but due to the ward's geographical layout or detachment away from other staffed areas it may be unsafe to reduce staffing.

Within this review, data analysis has suggested admission areas are over established. Anomalies within E-roster have been exposed however, it must be stated that clinical expertise, professional judgement and nurse sensitive metrics in these areas facilitates a more holistic assessment than just figures alone demonstrate. It is anticipated that using an 'admission multiplier' SafeCare will better reflect the required CHPPD where patient acuity routinely fluctuates and the volume of patient throughput is greater. But it would be prudent to be cautious in using raw data without clinical advice.

Despite the recommendation that patient flow information be included in nursing establishment reviews there is little guidance how this should be incorporated. Thus, the accompanying care hours dedicated to dealing with patient admissions, discharges and transfers for all wards has not been acknowledged in any analysis within this review.

Future utilisation of SafeCare at operational meetings will increase awareness with regards SCNT patient acuity v's staffing, but any decisions regarding staff redeployment will be heavily dependent upon up-to-date information. The current census periods are 12-hourly but with future software upgrades proposing census periods can be increased to as much as 12 times in every 24 hours, all ward areas could demonstrate a more timely and accurate representation. Nevertheless, it is unrealistic and perhaps counterproductive to expect nursing staff to update the system as frequently as every two hours.

Some additional nursing tasks as shown in ***table 2*** demonstrate that tasks are undertaken to support the indirect care of the patient. Whilst is should be commended for those areas that have accurately reported such additional tasks it could be argued that there is an underreporting of some of the task and in some areas. This could be because of the acuity of the ward and staffing issues or poor understanding that the time allocated to each task is split into 30 minute segments. Encouragement and education is needed and it is anticipated as staff become more focused to identify supporting tasks improvements will be made.

Trusts have a duty to ensure safe staffing levels are in place and patients have a right to be cared for by appropriately qualified and experienced staff in a safe environment. A comprehensive Nursing Establishment review has not been undertaken since January 2016. Since then the realisation of legislative and political change has become more apparent. Contributing factors to these changes are perceived as nursing staff retiring at an earlier age, new costs of training to be a nurse and, uncertainty of the UK leaving the EU curtailing overseas recruitment (RCN 2017).

There is an urgent need to be resourceful and innovative to respond to such consequences for nursing, both nationally and locally.

Recommendation from senior nurses within this organisation includes:

- Continue to implement SafeCare to all wards, whilst ensuring this captures all areas including the escalation wards on both sites and additional beds on all wards. This will enable a greater understanding and a truer reflection of the actual acuity and the impact on staffing numbers. We must not continue to invest in a tool that does not give us accurate data for the number of beds and the patient dependency
- Continue to monitor acuity v actual staffing in all ward areas to ensure safety and quality for patients, again including extra patients on wards and other areas.(clearly the objective is to cease the practice of placing additional patients on our wards)
- Develop processes to utilise SafeCare data to influence decisions regarding safe redeployment of staff, to move staff between wards, a practice that has been in place for some time manually.
- In order to move staff to other areas we must heed our skilled staff who know the wards – matrons and ward managers
- The recruitment and retention of nursing and healthcare staff is vital and we must ensure everything is being done at pace to assure the Director of Nursing and the Trust Board that the Nursing workforce is adequate.
- 6-monthly establishment reviews and recommendations to track the seasonal trends and determine any actions that need to be taken as a result
- Ensure ward managers work in a supervisory capacity at least 80 % on the ward to lead on quality, flow and safe staffing, she/he cannot do this when working clinically for the majority of the week (some up to 70%)
- If ward managers work over and above 20 % clinically then a red flag should be noted against this shift and a Datix submitted so this can be monitored, this can only be enacted when there is sufficient time in the Ward Manager shift.
- Develop the workforce in relation to Nursing Associates (Band 4) and plan for the future reflecting this skill mix In line with National Guidance
- Consider extending housekeeper/ward clerk hours to provide greater support on the wards releasing nursing time to care.
- Plan to increase rotation posts to target harder to recruit areas
- Develop further the Band 4 Scrub Practitioner programme for theatres, update to Workforce Committee

- The agreed 95% fill rate should be re-evaluated in light of vacancy rate and imperative to reduce T5.

Note: In times of high demand it is ever more likely census data will not be updated in a timely manner, thus, consideration for future software development should include a direct feed from the PSAG boards. Whilst this development can be absorbed by the contract with Elica (PSAG), it has been identified there will be a cost required by Allocate (SafeCare) to receive and manage this information via any interface.

12. Relevant literature

- Hurst, K (2003) Selecting and Applying Methods for Estimating the Size and Mix of Nursing Teams – A systematic Review commissioned by the Department of Health, Leeds: Nuffield Institute for Health
- National Institute for Health and Clinical excellence (2014) Clinical guideline 1: Safe staffing for nursing in adult in patient wards in hospitals, London, Department of Health
- National Patient Safety Agency (2009) Quarterly data summary. Issue 13: Learning from reporting – staffing. How do staffing issues impact on patient safety? London, NPSA
- Needleman et al (2002) Nurse-staffing levels and quality of care in hospitals
- NHS Commissioning Board (2012) Compassion in practice, Nursing, Midwifery and Care Staff. Our Vision and Strategy. Leeds NHSCB
- NICE Guidance on Safer Staffing for nursing in adult in-patient wards in acute hospitals (2012)
- Rafferty, AM. Clarke SP, Coles J, McKee M, Aiken LH (2007) Outcomes of variation in hospital nurse staffing in English Hospitals: a cross sectional analysis of survey data and discharge records. International Journal of Nursing Studies, 44 (2) pp 175-182
- RCN (2010) Guidance on safe nurse staffing levels in the UK, London: Royal College of Nursing
- Safe and Effective Staffing: The Real Picture. UK Policy Report
- Safe and Effective Staffing: Nursing Against the Odds. UK Policy Report
- Safer Nursing Care Tool (2014)
- Safer Staffing Guidance, Trust Development Authority (2015)

Appendix 1. **Safer Nursing Care Tool (SCNT) – Acuity and dependency levels.**

LEVEL '0'
Patient requires hospitalisation and needs can be met in a 'normal' ward **CHPPD = 4.35hrs**
• Elective medical or surgical admission • May have underlying medical condition requiring on-going treatment • Patients awaiting discharge • Post-operative / post-procedure care – observations recorded ½ hourly initially then 4-hourly • Regular (two-four hourly) observations • Early warning score within normal threshold • ECG monitoring • Fluid management • Oxygen therapy less than 35% • Patient controlled analgesia (PCA) • Nerve block • Single chest drain • Confused patients not at risk • Patients requiring assistance with some activities of daily living, requires one person to mobilise • Experiences occasional incontinence

LEVEL '1a'
Acutely ill patient requiring intervention or those who are unstable and may deteriorate **CHPPD = 6.10hrs**
• Increased observations and therapeutic interventions • Early warning score - trigger point reached and requiring escalation (EWS 6) • Post-operative care following complex surgery • Emergency admission requiring immediate therapeutic intervention • Instability requiring continual observation / invasive monitoring • Oxygen therapy greater than 35%, chest physiotherapy, central line, epidural or multiple chest of extra ventricular drains • Severe infection or sepsis

LEVEL '1b'
Patient is stable but is dependent on nurses to meet most or all their daily living activities **CHPPD = 7.55hrs**

- **Complex would management requiring more than one nurse or procedure taking more than one hour to complete**
- **VAC therapy, where ward-based nurses undertake the treatment**
- **Patients with spinal instability / spinal cord injury**
- **Mobility or repositioning difficulties requiring two staff**
- **Complex intravenous drug regimens – (including prolonged preparatory / administration / post administration care)**
- **Patient and / or carers requiring enhanced psychological support owing to poor disease prognosis or clinical outcome**
- **Patients on end-of-life plan**
- **Confused patients at risk or requiring constant (not continuous) supervision**
- **Requires assistance with most or all activities of daily living**
- **Potential for self-harm and requires constant observation**
- **Complex discharge, which is the ward-based nurses' responsibility**

LEVEL '1c'

Patient requires one-to-one or continuous supervision to maintain safety

CHPPD = 20.72hrs

- **Patient has cognitive impairment and requires specialised one-to-one care to prevent further harm / injury**
- **Patient has significant mental health / capacity needs and / or is likely to unintentionally leave a protected (safe) environment**
- **Interventions may require depravation of liberty authorisation or section under the Mental Health Act**
- **Requires continuous supervision by one nurse / support worker and two nurses / support workers to meet care needs**

- **Patient has deteriorating / compromised single organ system and has complex drug regimens or requires more intensive monitoring**
- **Specialist unit intervention is required to meet on-going care needs**

LEVEL '2'

May be managed within clearly designated beds staffed with expert nurses and resources or may require transfer to a dedicated level 2 unit

CHPPD = 8.65hrs

- **Deteriorating / compromised single organ system**
- **Post-operative optimisation (pre-op invasive monitoring) / extended post0op care**
- **Patients requiring non-invasive ventilation / respiratory support: CPAP /BiPAP in acute respiratory failure**
- **First 24 hours following tracheostomy.**
- **Requires one or more therapeutic interventions, including:**
  - **Greater than 50% oxygen continuously**
  - **Continuous cardiac monitoring and invasive pressure monitoring**
  - **Drug infusion requiring more intensive monitoring e.g. vasoactive drugs (amiodarone, inotropes, GTN) or potassium, magnesium**
  - **Pain management such as intra-thecal analgesia**
  - **CNS depressed airway AND protective reflexes**

- **Invasive neurological monitoring**

LEVEL '3'

Patient needing advance respiratory support and / or therapeutic interventions for multiple organ problems

CHPPD = 26.16hrs

- **Monitoring and supportive therapy for compromised / collapsed two or more organ / systems**
- **Respiratory or CNS depression / compromise requiring mechanical / invasive ventilation**
- **Invasive monitoring, vasoactive drugs, hypovolemia / haemorrhage / sepsis treatment or neuro protection**

Appendix 2.

RN:HCA ratios

August	Registered Staff	Unregistered Staff	Ratio of Registered to Unregistered Staff	
Acute Medical Unit (AMU) (PRH)	51.9%	48.1%	1.08	0.93
Acute Medical Unit (AMU) (RSH)	61.1%	38.9%	1.57	0.64
Day Surgery Escalation Ward (PRH)	75.4%	24.6%	3.07	0.33
DSU Escalation (RSH)	49.8%	50.2%	0.99	1.01
DSU Short Stay (RSH)	59.2%	40.8%	1.45	0.69
ITU/HDU (PRH)	92.9%	7.1%	13.00	0.08
ITU/HDU (RSH)	94.3%	5.7%	16.48	0.06
Surgical Assessment Unit (SAU) & Short Stay Surgical	55.3%	44.7%	1.24	0.81
Ward 10 - Trauma & Orthopaedics	52.7%	47.3%	1.11	0.90
Ward 11 - Trauma & Orthopaedics (PRH)	57.9%	42.1%	1.38	0.73
Ward 15 - Acute Stroke Unit	61.6%	38.4%	1.61	0.62
Ward 16 - Stroke Rehab	47.8%	52.2%	0.92	1.09

Ward 17 - Endocrinology & Care of the Older Person	48.1%	51.9%	0.93	1.08
Ward 21 Supported Discharge	48.3%	51.7%	0.94	1.07
Ward 22 - Orthopaedics	49.5%	50.5%	0.98	1.02
Ward 22 - Stroke & Rehabilitation Unit	41.2%	58.8%	0.70	1.43
Ward 23 - Oncology & Haematology	59.1%	40.9%	1.45	0.69
Ward 24	56.3%	43.7%	1.29	0.78
Ward 25 - Colorectal and Gastroenterology	54.5%	45.5%	1.20	0.83
Ward 26 Urology	63.1%	36.9%	1.71	0.59
Ward 26 V&ICA	48.7%	51.3%	0.95	1.05
Ward 27 - Respiratory	53.3%	46.7%	1.14	0.88
Ward 28 Nephrology / Medicine	52.9%	47.1%	1.12	0.89
Ward 32 - Short Stay	53.1%	46.9%	1.13	0.88
Ward 4 - Gastroenterology	56.0%	44.0%	1.27	0.78
Ward 6 - Coronary Care Unit (PRH)	76.1%	23.9%	3.19	0.31
Ward 7 - Acute Medical Short Stay	52.3%	47.7%	1.09	0.91
Ward 8 - Head & Neck Adult Ward	67.5%	32.5%	2.08	0.48
Ward 9 - Respiratory	56.0%	44.0%	1.27	0.79