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SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST

EXECUTIVE SUMMARY
REPORT TO THE TRUST HEALTHCARE GOVERNANCE COMMITTEE

HELD MARCH 2014

Subject:	Quarterly Trust Mortality Report – March 2014
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Status[1]	N

PURPOSE OF THE REPORT:

To provide the HCGC with a Trust Mortality Report covering current Hospital Standardised Mortality Ratio (HSMR) and Standardised Hospital-level Mortality Indicator (SHMI) values and provide comparator data with other trusts in England.

KEY POINTS:

HSMR

Most recent 12-month rolling HSMR – 1 January 2013 – 31 December 2013
91 (87-95) for All Admissions and "lower than expected" when compared with hospitals trusts nationally.
The predicted rebased value is 97 (94-102) and is "within expected range".

SHMI

Most recent 12-month rolling SHMI - 1 July 2012 – 30 June 2013 (published January 2013)
0.88 (0.89 -1.12 *over-dispersion control limits of 95%*). This is in the "lower than expected" range and rebased.
The next publication is expected at the end of April 2014.

IMPLICATIONS

	Aim of the STHFT Corporate Strategy 2012-2017	Tick as Appropriate
1	Deliver the best clinical outcomes	√
2	Provide Patient Centred Care	√
3	Employ Caring and Cared for Staff	
4	Spend Public Money Wisely	√
5	Deliver Excellent Research, Education & Innovation	
	CQC Outcome	

RECOMMENDATION(S):

Note the most current HSMR and SHMI values.

Both SHMI and HSMR should continue to be monitored and compared at future meetings.

APPROVAL PROCESS

Meeting	Presented by	Approved	Date
HCGC	Medical Director		24 March 2014

Sheffield Teaching Hospitals NHS Foundation Trust
Mortality Report – March 2013

Introduction

This report provides an overview of mortality across Sheffield Teaching Hospitals NHS Foundation Trust as one outcome indicator that contributes to the overall quality of patient care. The report will present the Hospital Standardised Mortality Ratio (HSMR) and the Summary Hospital-level Mortality Indicator (SHMI) compared with previous months and with other hospitals in England.

1. Hospital Standardised Mortality Ratio (HSMR)

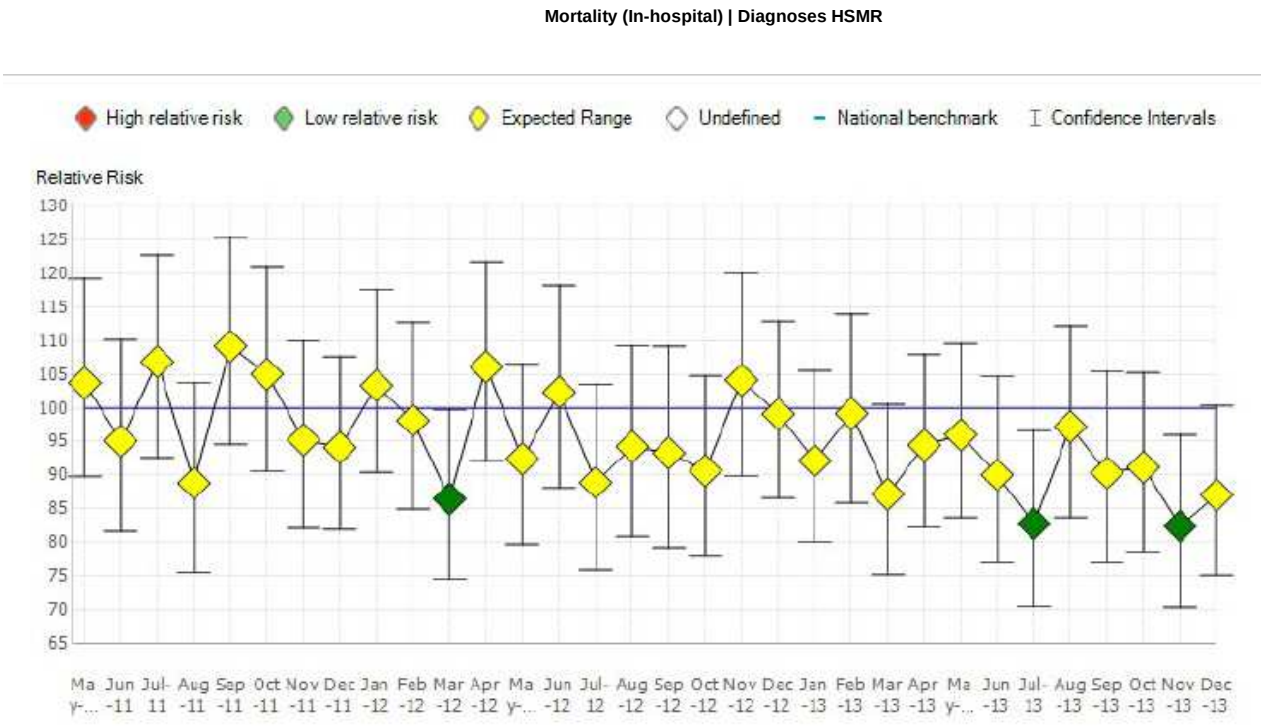
The HSMR is an *indicator* of healthcare quality that measures whether the death rate at a hospital is higher or lower than would be expected. Dr Foster reports the annual HSMR in their Good Hospital Guide to enable comparison of mortality rates across all hospitals in England for any particular year. The 2012/13 Guide was published in December 2013.

1.1 Trend analysis

Figure 1 depicts monthly HSMR values, as calculated using Dr Foster Quality Investigator, over the past 32 months benchmarked to the appropriate year.

The points highlighted in green indicate a significantly lower than national average mortality that particular month, where average national mortality is equal to 100.

Fig. 1 HSMR Trend (Month); 1 May 2011 – 31 December 2013



This is also monitored through the use of SPC charts

1.2 12-month Rolling HSMR – 1 January 2013 to 31 December 2013

Dr Foster Quality Investigator Tool enables previewing of the rolling HSMR on a monthly basis.

Table 1 indicates the most up to date data available as a rolling 12 months HSMR from January 2013 – December 2013 and also shows the split between elective and non-elective admissions.

Table 1

STH NHSFT	Spells	Rolling 12 months HSMR * not rebased yet January 2013 - December 2013
All Admissions	81,798	**90.90 (87.25 – 94.67)**
Elective Admissions	49,993	91.30 (72.83 – 113.04)
Non Elective Admissions	31,865	90.89 (87.16 – 94.73)

Summary

The HSMR for January 2013 – December 2013 of **91 (87 – 95)** for All Admissions represents a significantly lower than expected relative risk when compared to hospital trusts nationally and taking into account trust case mix.

The rebased value for this period is currently predicted to be 97 (94 – 102) and is "within expected range".

1.3 HSMR Comparisons for April – December 2013 (Year-to-Date)

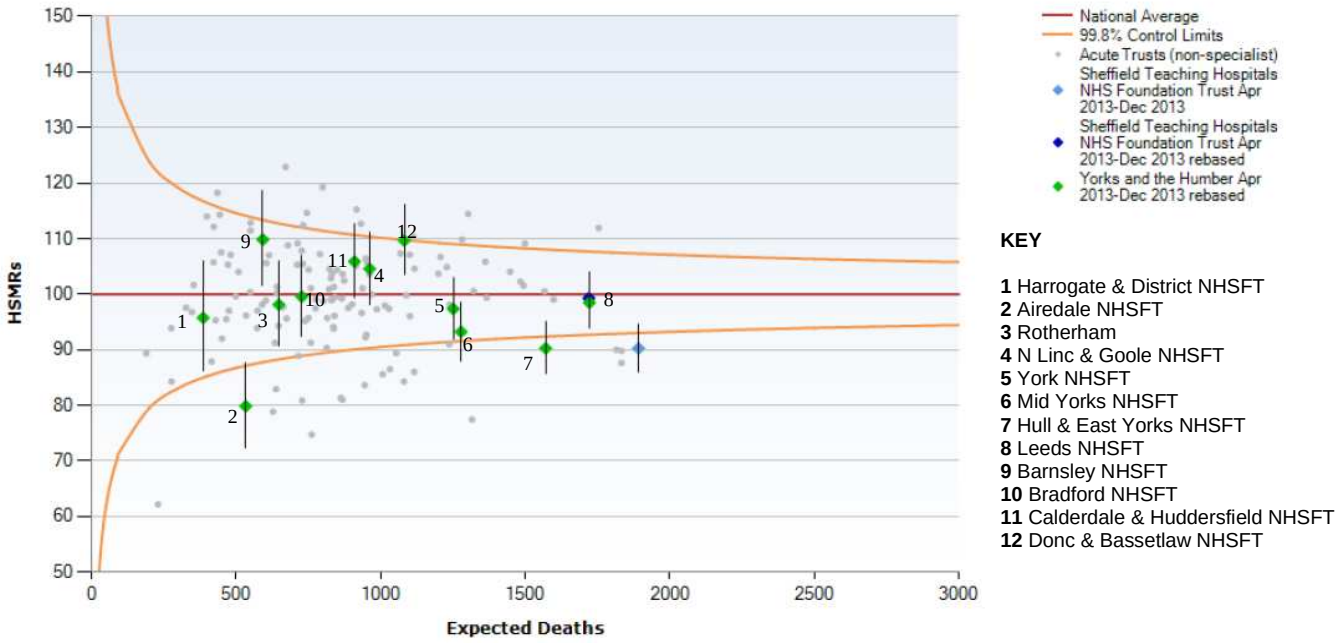
Dr Foster enables HSMR comparisons to be made with other trusts in England. Any peers may be compared.

Figure 2 is a funnel plot showing the distribution of HSMRs of all trusts in Yorkshire and The Humber for the year-to-date (April – December 2013), set against a background of all Acute Trusts in England (non-specialist).

All values shown are predicted rebased values.

The predicted rebase for Sheffield Teaching Hospitals NHSFT for April - December 2013 is 99 (95 – 104) and "as expected" when compared with hospital trusts nationally. It should be noted that this represents only 9 months of data.

Fig. 2 Acute Trust HSMRs highlighting Yorkshire and The Humber April 2013 – December 2013



KEY

1 Harrogate & District NHSFT
2 Airedale NHSFT
3 Rotherham
4 N Linc & Goole NHSFT
5 York NHSFT
6 Mid Yorks NHSFT
7 Hull & East Yorks NHSFT
8 Leeds NHSFT
9 Barnsley NHSFT
10 Bradford NHSFT
11 Calderdale & Huddersfield NHSFT
12 Donc & Bassetlaw NHSFT

2. Standardised Hospital-level Mortality Indicator (SHMI)

2.1 Rolling SHMI 1 July 2012 to 31 June 2013

The SHMI is an *indicator* of healthcare quality that measures whether the death rate at a hospital *and up to 30 days from discharge* is higher or lower than expected.

The most recent information from the IC, published 29 January 2013, covers the period **1 July 2012 – 31 June 2013.**

The SHMI value for STH is **0.88** (0.89 -1.12 *over-dispersion control limits of 95%*).

On the funnel plot in Figure 3, the control limits are shown by the two dotted lines.

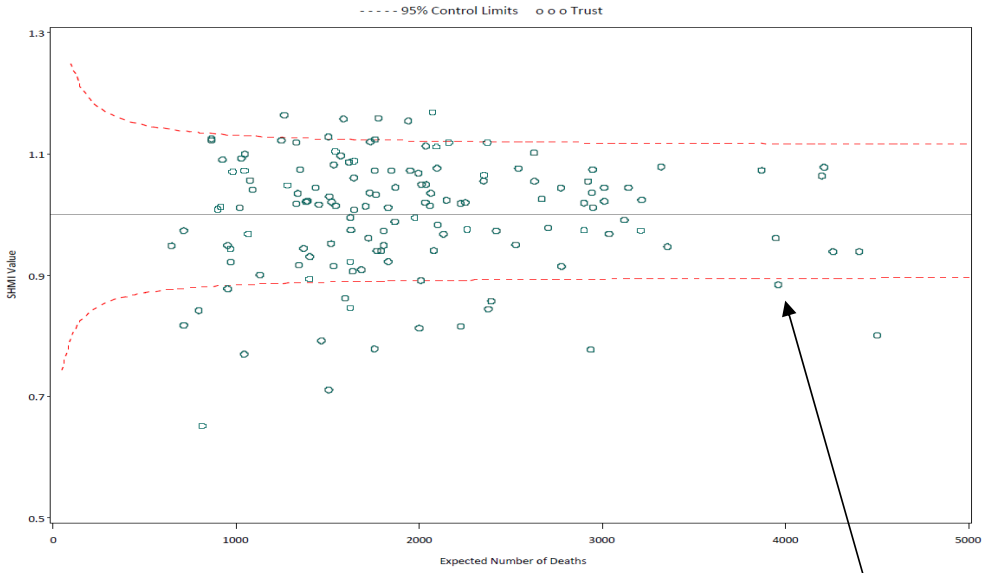
- Trusts whose SHMI value falls above the upper control limit are categorised as 'higher than expected'.
- Trusts whose SHMI value falls between the upper and lower control limits are categorised as 'as expected'.
- Trusts whose SHMI value falls below the lower control limit are categorised as 'lower than expected'

The banding for STH NHSFT is "lower than expected" and is the lowest current SHMI value in Yorkshire and the Humber (Table 3). SHMI undergoes rebasing quarterly hence the figures quoted are rebased values.

Nationally;

- 9 trusts had a 'higher than expected' SHMI value, compared to 11 trusts for the same period a year previously
- 17 trusts had a 'lower than expected' SHMI value (including STH NHSFT), compared to 16 trusts for the same period a year previously
- 115 trusts had an 'as expected' SHMI value, the same number of trusts as for the same period a year previously i.e.,

Fig 3. Summary Hospital-level Mortality Indicator (SHMI) July 2012 – June 2013



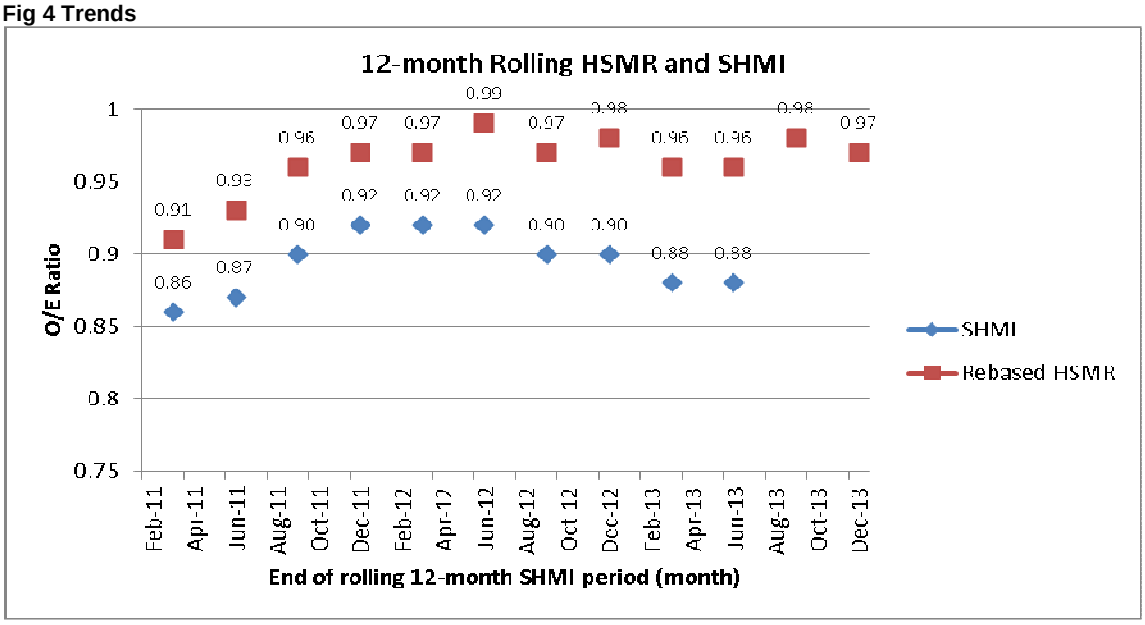
N.B. The figure for the "expected number of deaths" for STH NHSFT is 3961.46

The next update is due in April 2014.

2.2 SHMI and HSMR Trends

2.2.1 The rolling 12 month SHMI and HSMR values by quarter for Sheffield Teaching Hospitals since April 2011 are plotted in Figure 4 (HSMR has not been x100 as per the convention so that both SHMI and HSMR can be viewed on a single graph).

Fig 4 Trends

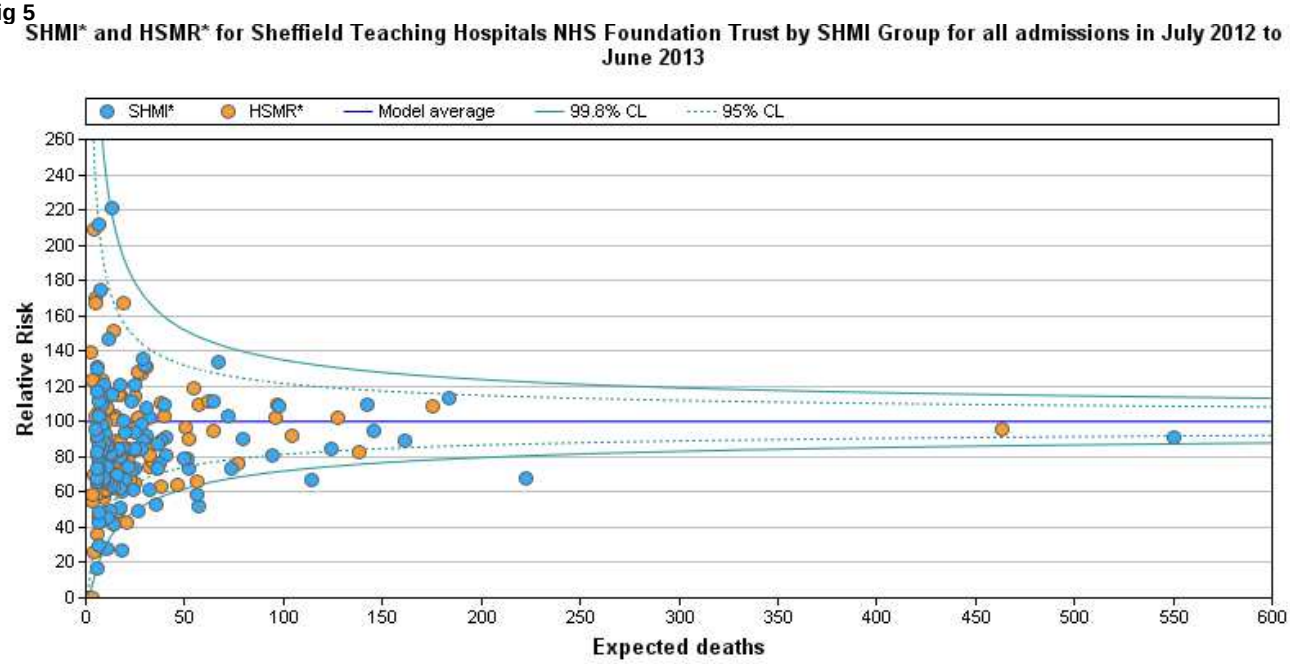


Source
SHMI: Clinical Indicator Previewer, IC. Values are rolling one year periods, six months in arrears.
HSMR: Dr Foster Real Time Monitoring. Values are rolling one-year periods, three months in arrears.

2.2.2 Each quarter analysis of the data underpinning the SHMI is performed. The individual O/E ratios for the 140 diagnosis groups can be calculated manually. The data can be viewed on a funnel plot in the Dr Foster Quality Investigator Tool (Figure 5) and this provides one way of highlighting any statistically significantly high results (SHMI has been x100 by Dr Foster so that both SHMI and HSMR can be viewed on a single graph).

2.2.3 The 140 SHMI groups are represented by the blue dots (the orange dots represent the 56 HSMR groups).

Fig 5



2.2.4 The previous Mortality Report (December 2013) indicated 4 blue 'dots' falling between the upper dotted and the solid lines of the funnel representing values significantly higher than expected for the April 2012 – March 2013 data.

The data for July 2012 – June 2013 show that the SHMI O/E ratio for the SHMI group Pulmonary Heart Disease has fallen to "within expected range" (figure 6). A summary of the work carried out so far to understand the values of the three remaining SHMI groups is given below.

Fig 6.

SHMI Group	SHMI (O/E) Ratio		HSMR (O/E) Ratio
	April 12 – March 13	July 12 – June 13	July 12 – June 13
Short gestation, low birth weight, and fetal growth retardation	2.15 (29/13.5)	2.21 (29/13.11)	166.74 (32/19.19)
Fracture of neck of femur (hip)	1.32 (95/71.93)	1.33 (89/66.79)	111.29 (69/62)
Calculus of urinary tract, Other diseases of kidney and ureters, Other diseases of bladder and urethra	2.34 (13/5.54)	2.11 (14/6.62)	209.36 (9/4.3)
Pulmonary heart disease	1.46 (36/24.72)	1.20 (30/24.94)	110.59 (42/37.98)

Short Gestation, Low Birth Weight and Fetal Growth Retardation

The SHMI O/E ratio remains significantly higher than expected for July 12 – June 13 at 2.21

The HSMR O/E ratio is also significantly higher than expected for the corresponding time period at 166.74 and there have been Dr Foster "red alerts" in this time period in Aug 12 and May 13 (and one further alert more recently in Sept 13).

A brief analysis of the HSMR O/E ratio has been discussed with the Clinical Lead for Neonatology Services and the Mortality Steering Group, and work is on-going to understand the reasons behind the significantly high SHMI and HSMR O/E ratios as these data do not align with other external sources of mortality data for this SHMI group.

The initial findings of the internal review suggest that the risk adjustment model (Charlson Index) used by both HSMR and SHMI is not sufficiently sensitive to apply to neonates as most of the co-morbidities adjusted for are not applicable. ICD10 and OPCS4 codes are over 20 years old and are not sensitive enough to describe extremely low birth weight accurately. Birth weights in this category range from circa 350g to 1000g and known survival rates within this broad range vary enormously. The Jessop Wing cares for many babies at the lower end of this range and hence the mortality rate is likely to be higher than hospitals that mainly care for babies circa 1000g. In addition, it is important to note that each individual death within Neonatology services is scrutinised via internal peer review, and the unit also participates in the confidential enquiry MBRRACE-UK- a perinatal death data collection.

A brief comparative report is being compiled and a presentation to the Mortality Steering Group is planned during the next quarter. Feedback will be provided to the Healthcare Governance Committee in a future report

Fracture of Neck of Femur

The SHMI O/E ratio remains significantly higher than expected for July 12 – June 13 at 1.33.

The HSMR O/E ratio is "as expected" for the corresponding time period at 111.29. No Dr. Foster "red alerts" have been observed in this time period or up to the most recent data (December 2013).

An exercise in improving the depth of coding has been in place since April 2013 as it was found that about 1/3 patients had no co-morbidities recorded (used in risk adjustment). Discharge summaries are now dictated before coding occurs and a check list for recording co-morbidities is being used. Orthogeriatric consultants are also holding regular meetings with the coders to track progress. It should be noted that any impact of these changes on SHMI and HSMR will be delayed.

A service evaluation of all fractured neck of femur patients admitted in a three month period in 2012 has shown a wound problem requiring further surgery of 1.9% in-line with a national surgical site infection rate of 2%. Actions from the evaluation included a review of the pathway and emphasising the importance of recording MUST scores.

Service Improvement work has focussed on a review of the fracture of neck of femur pathway.

The Hip fracture mortality group have been involved in a post-operative mortality review and the findings have been presented to the Mortality Steering Group. A number of areas for improvement have been identified including rapid availability of notes, review of junior and senior medical staff cover and modifications in perioperative management (incorporated in a rolling audit and training programme).

Calculus of Urinary Tract, Other Diseases of Kidney and Ureters, Other Diseases of Bladder and Urethra

- The SHMI O/E ratio remains significantly higher than expected for July 12 – June 13 at 2.11
- The HSMR O/E ratio is "as expected" for the corresponding time period at 209.36. No Dr Foster "red alerts" have been observed during this time period or up to the date of the most recent data (December 2013).
- This group is a combination of three diagnostic categories. The combined number of observed vs expected deaths in these categories was 14 vs 6.2 (SHMI) and 9 vs 4.3 (Dr Foster Quality Investigator). In view of the varied nature of the diagnoses involved, the care of each patient concerned will be scrutinised via a casenote review.

2.2.5 Other Surgical Mortality Review – Acute Kidney Injury Theme

As part of the programme of surgical mortality review, a case note review of 20 surgical patients who died with acute kidney injury (AKI) was undertaken (24 episodes of AKI) by a consultant nephrologist and the results presented to the Mortality Steering Group.

It was not established that AKI was a direct cause of death in any of the cases reviewed. In 4 cases, however, escalation of treatment was felt inappropriate due to multiple co-morbidities and AKI was listed as one of the co-morbidities.

In conclusion the management of AKI in some of these patients was felt to be suboptimal (in respect of prevention, recognition and management). Strict adherence to the requirements of the Deteriorating Patient Pathway will help in the prevention of AKI, whilst the AKI guidelines and care bundle which are set out in the recently-approved STHFT AKI policy will address the other elements. It has been recognised that active implementation of this policy is required and this forms the basis of the AKI project currently being undertaken by the Renal Directorate on behalf of the Trust.

2.3 SHMI Comparator Tables

The SHMI values for the period **July 2012 to June 2013** for The Shelford Group of hospitals (Table 2) and Yorkshire and The Humber (Table 3) are shown below. The Shelford Group comprises ten leading NHS multi-specialty academic healthcare organisations.

Table 2 SHMI by provider (Shelford Group) for all admissions in July 2012 to June 2013

Provider	Spells	SHMI	Banding
University Hospitals Birmingham NHS Foundation Trust	58337	1.06	As expected
University College London Hospitals NHS Foundation Trust	68179	0.74	Lower than expected
Sheffield Teaching Hospitals NHS Foundation Trust	107529	0.88	Lower than expected
Oxford University Hospitals NHS Trust	110281	0.95	As expected
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	105262	0.91	As expected
King's College Hospitals NHS Foundation Trust	113656	0.92	As expected
Imperial College Healthcare NHSFT	103386	0.79	Lower than expected
Guy's and St Thomas' NHS Foundation Trust	84473	0.78	Lower than expected
Central Manchester University Hospitals NHS Foundation Trust	100669	1.04	As expected
Cambridge University Hospitals NHS Foundation Trust	71017	0.86	Lower than expected

Source: The NHS IC – SHMI Indicator Data

Table 3 SHMI by provider (Yorkshire and The Humber) for all admissions in July 2012 to June 2013

Provider	Spells	SHMI	Banding
Sheffield Teaching Hospitals NHS Foundation Trust	107529	0.88	Lower than expected
Leeds Teaching Hospitals NHS Trust	126278	0.95	As expected
Hull and East Yorkshire Hospitals NHS Trust	89983	1.03	As expected
Mid Yorkshire Hospitals NHS Trust	96675	0.94	As expected
York Teaching Hospital NHS Foundation Trust	76092	1.01	As expected
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	74744	1.08	As expected
Calderdale and Huddersfield NHS Foundation Trust	75991	1.06	As expected
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	57605	1.09	As expected
Bradford Teaching Hospitals NHS Foundation Trust	74451	1.00	As expected
Barnsley Hospital NHS Foundation Trust	42454	1.07	As expected
The Rotherham NHS Foundation Trust	40673	1.11	As expected
Airedale NHS Foundation Trust	30386	0.93	As expected
Harrogate and District NHS Foundation Trust	23633	0.98	As expected

Source: The NHS IC- SHMI Indicator Data