

TRUST BOARD MEETING - 25 September 2013
Mortality Report

PURPOSE	To provide the Trust Board with an update on mortality.
PREVIOUSLY CONSIDERED BY	Clinical Governance Strategy Committee, Patient Safety Committee and RAQC on 18 September 2013.
Objective(s) to which issue relates *	<input checked="" type="checkbox"/> 1. To continuously improve the quality of our services in order to provide the best care and optimise health outcomes for each and every individual accessing the Trust's services <input type="checkbox"/> 2. To excel at customer service, achieving outstanding levels of communication and patient, carer and GP satisfaction <input checked="" type="checkbox"/> 3. To provide and support the best standards of integrated care for the elderly and those with long term conditions by developing key partnerships and services <input checked="" type="checkbox"/> 4. To consolidate services and enhance local access to specialist services in order to deliver high quality, safe, seamless, innovative and integrated services which are sustainable <input type="checkbox"/> 5. To support the continued development of the Mount Vernon Cancer Centre and provision of leading local and tertiary cancer services <input type="checkbox"/> 6. To improve our staff engagement and organisational culture to be amongst the best nationally
Risk Issues (Quality, safety, financial, HR, legal issues, equality issues)	As identified in the report
Healthcare/ National Policy (includes CQC/Monitor)	CQC Compliance
CRR/Board Assurance Framework *	<input type="checkbox"/> Corporate Risk Register <input checked="" type="checkbox"/> BAF
ACTION REQUIRED *	
For approval	<input type="checkbox"/>
For discussion	<input checked="" type="checkbox"/>
For decision	<input type="checkbox"/>
For information	<input type="checkbox"/>
DIRECTOR:	Medical Director
PRESENTED BY:	Deputy Medical Director
AUTHOR:	Head of Quality and Patient Safety / Clinical Improvement Lead / Senior Information & Research Analyst / Director of Medical Education/ Medical Director
DATE:	September 2013

We put our patients first We work as a team We value everybody We are open and honest

We strive for excellence and continuous improvement

1. BACKGROUND

This report provides details of the latest mortality figures.

2. MORTALITY UPDATE

2.1 Introduction

Although the mortality rates within the Trust have improved in many areas since 2010 a focus on reducing mortality remains an improvement priority for 2013/14. It is a key indicator for assessing improved outcomes for patients and is important in monitoring the effects of the implemented redesign of clinical pathways. These redesigned pathways are occurring due to Trust-wide initiatives, often in conjunction with the CCG, and as a result of the *Our Changing Hospitals* programme as the Trust strives to continuously improve the quality of care that is provided.

2.2 Mortality indicators.

There are 3 main types of mortality indicator. Crude mortality is a simple analysis of the percentage of patients who died against the number of admissions to hospital and makes no adjustment for complexity. Hospital standardised mortality ratio (SHMI) is the measure used by Dr Foster. It includes case-mix adjustment for 8 variables (*inc.* age, other conditions and palliative care coding). Standardised Hospital Mortality Index (SHMI) is case-mix adjusted for just 5 variables. It does not make an adjustment for palliative care and, importantly, includes deaths in the community up to 30 days after discharge.

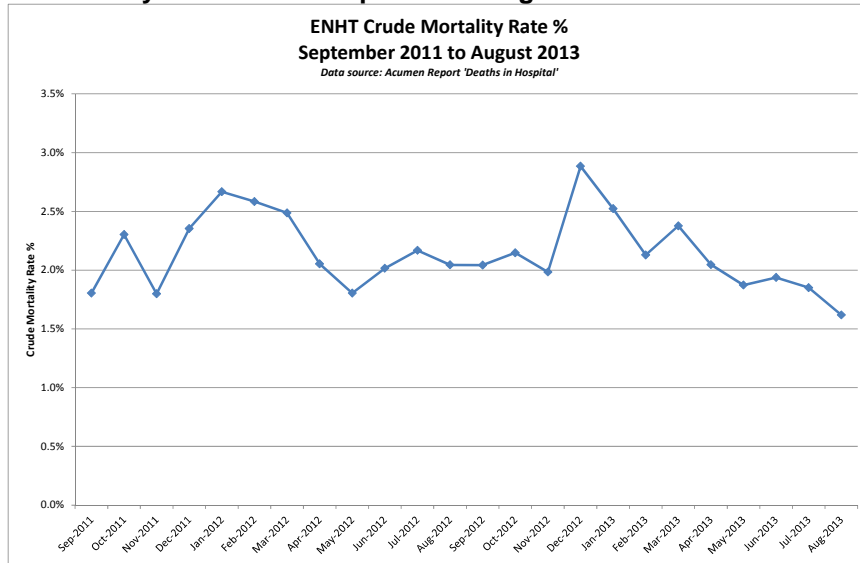
Crude mortality is available with one day following the end of the month, HSMR is 3 months in arrears and SHMI 8 months in arrears.

2.3 Crude Mortality

Crude mortality is most useful in monitoring the performance of a defined clinical unit where the case-mix is expected to remain stable over time. It is less useful for comparing the performance of clinical units with differing case-mix. Nationally there is an inexorable trend to greater case complexity due to multiple co-morbidities so crude mortality could remain unchanged when other mortality indicators go down. There is a significant seasonal variation in crude mortality.

The Trust's crude mortality rate for the year to date (April to August 2013) is 1.9%. The crude mortality has been in steep downward trajectory since December 2012.

Figure 1: Crude Mortality Rate % from Sep 2011 to Aug 2013



2.4 Hospital Standardised Mortality Ratio (HSMR)

The Trust's position for the first quarter of 2013/14 is 6th out of the 17 acute trusts (excluding the cardiac Papworth Hospital) in the East of England (Figure 1) and as expected at 89.8 (against the 2012/13 data benchmark).

Figure 2: HSMR (April to June 2013) East of England

Peer (SHA)	Spells	Superspells	Deaths		Relative Risk		
			Obs.	Exp.	HSMR	Low	High
Independent Sector Activity (not LSC)	954	953	0	0.2	0		
Papworth Hospital NHS Foundation Trust	3,534	3,074	30	53.9	55.7	37.6	79.5
The Princess Alexandra Hospital NHS Trust	5,088	5,070	197	229.4	85.9	74.3	98.8
West Suffolk NHS Foundation Trust	4,768	4,697	203	234.8	86.5	75.0	99.2
Cambridge University Hospitals NHS Foundation Trust	11,514	11,341	312	358.5	87.0	77.7	97.3
Colchester Hospital University NHS Foundation Trust	6,408	6,371	294	334.2	88.0	78.2	98.6
Hinchingbrooke Health Care NHS Trust	3,218	3,193	109	122.9	88.7	72.8	107.0
East and North Hertfordshire NHS Trust	7,249	7,198	314	349.8	89.8	80.1	100.3
Peterborough and Stamford Hospitals NHS Foundation Trust	6,868	6,849	290	315.7	91.9	81.6	103.1
Southend University Hospital NHS Foundation Trust	8,389	8,364	303	326.1	92.9	82.8	104.0
Ipswich Hospital NHS Trust	7,438	7,418	283	299.4	94.5	83.8	106.2
Bedford Hospital NHS Trust	3,767	3,705	184	192.2	95.7	82.4	110.6
Luton and Dunstable Hospital NHS Foundation Trust	5,947	5,920	232	242.4	95.7	83.8	108.9
Norfolk and Norwich University Hospitals NHS Foundation Trust	14,849	14,711	527	527.9	99.8	91.5	108.7
West Hertfordshire Hospitals NHS Trust	6,913	6,879	301	295.2	102.0	90.8	114.2
James Paget University Hospitals NHS Foundation Trust	3,797	3,738	214	206.8	103.5	90.1	118.3
Basildon and Thurrock University Hospitals NHS Foundation Trust	5,795	5,572	322	308.6	104.3	93.3	116.4
The Queen Elizabeth Hospital, King's Lynn, NHS Foundation Trust	6,182	6,139	264	252.0	104.8	92.5	118.2
Mid Essex Hospital Services NHS Trust	6,450	6,398	266	252.2	105.5	93.2	118.9
NHS Community Trusts	1,043	699	66	54.2	121.8		
ALL	123,403	121,521	4,711	4,957.0	95.0	92.3	97.8

2.4.1 HSMR Trends for Trust and Divisions July 2011 to June 2013

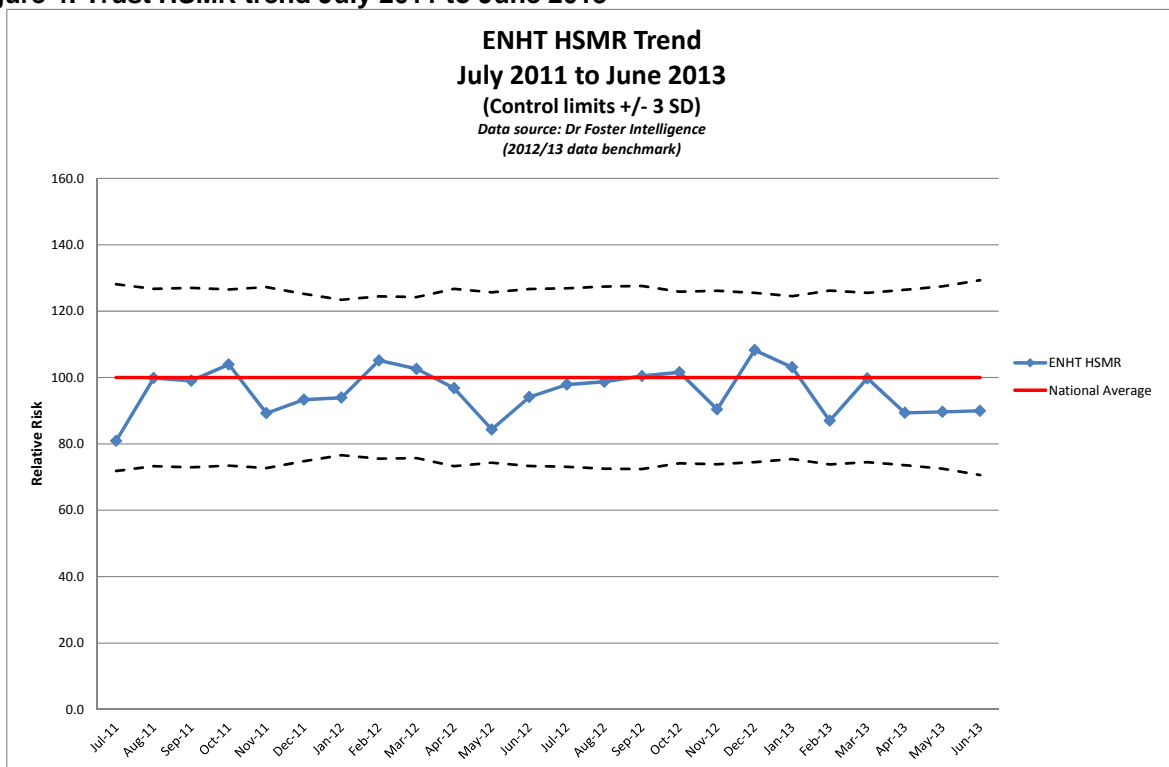
For the latest rolling year Trust's HSMR is below 100 for each Division with particularly good performance in Cancer, Surgery and Women & Children. As anticipated there has been a marked improvement in mortality in all centralised services. Whilst current actions should produce small improvements in mortality in the Medicine division, I do not envisage that significant improvements will occur before full centralisation in late 2014.

Figure 3: Monthly Trust and Divisional HSMR April to June 2013

	April 2013	May 2013	June 2013	July 2013	Aug 2013	Sept 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	HSMR RY
Trust	88.7	89.5	89.9										96.5
Medicine	94.8	91.9	93.8										102.9
Surgery	91.0	87.7	89.3										90.1
Women & Children	0.0	253.9	0.0										79.2
Cancer	51.1	77.1	77.0										65.8

The following 5 charts show the HSMR trends for the Trust and the Divisions from July 2011 to June 2013.

Figure 4: Trust HSMR trend July 2011 to June 2013



Performance within the Divisions shows a predictable month on month variability.

Figure 5: Medicine Division HSMR trend

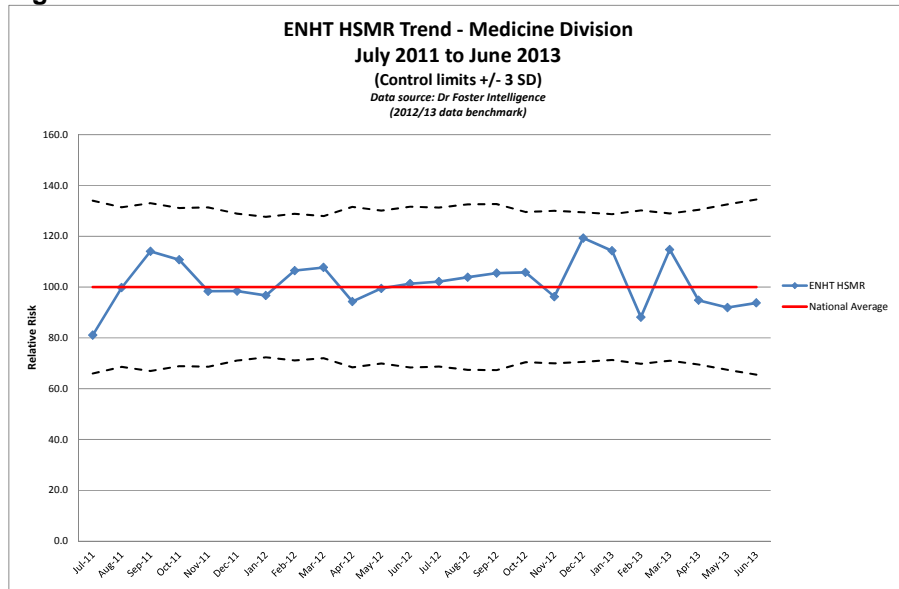


Figure 6: Surgery Division HSMR trend

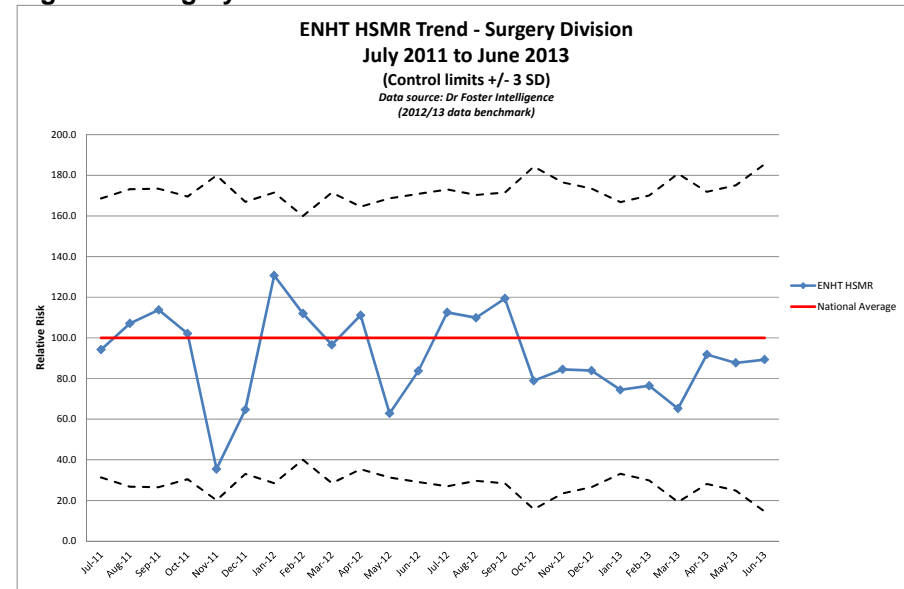


Figure 7: Women's & Children's Division HSMR trend

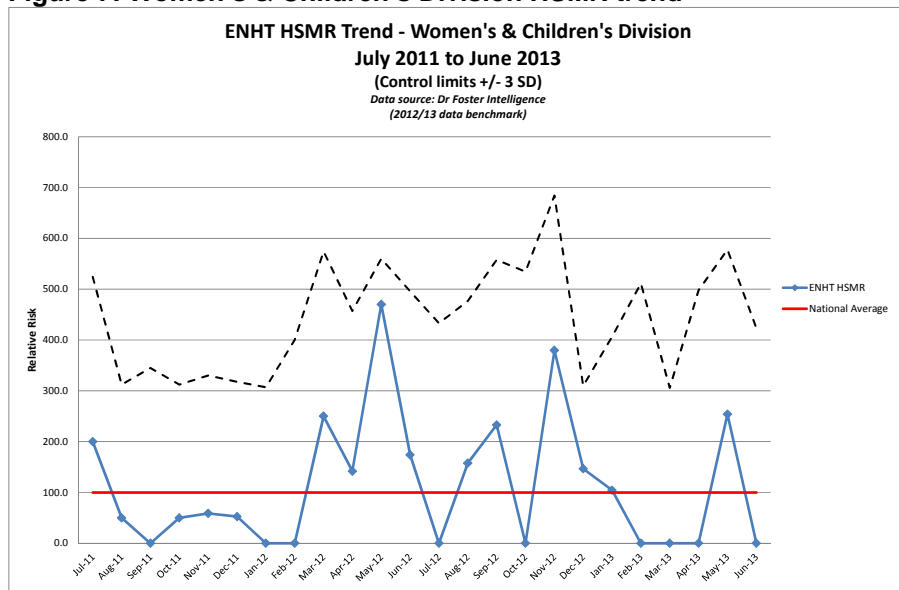
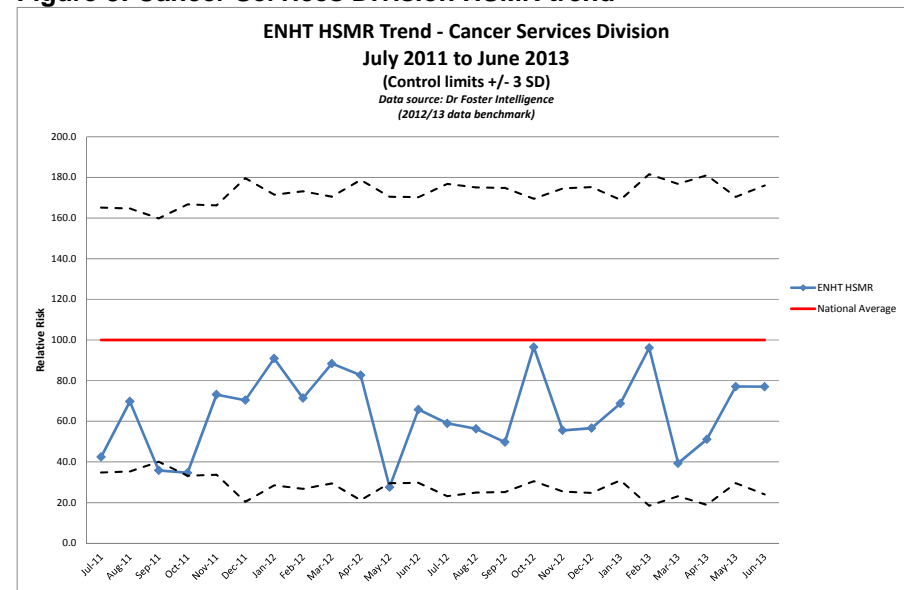


Figure 8: Cancer Services Division HSMR trend

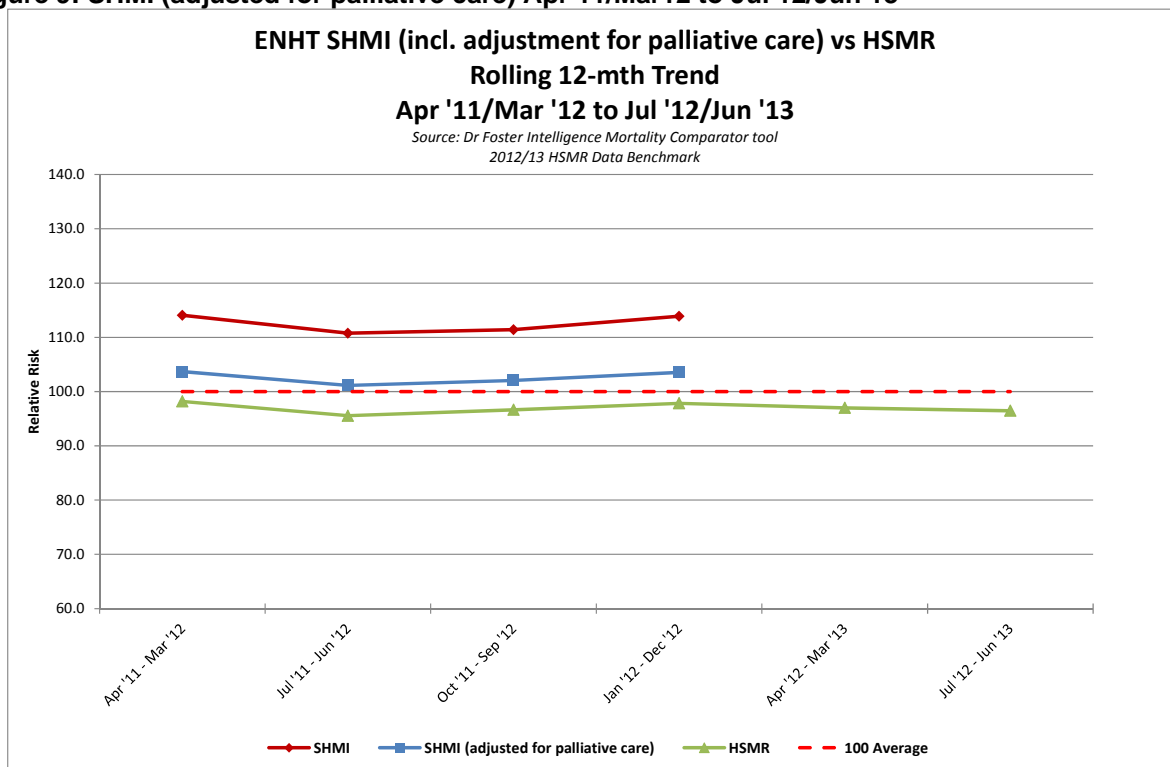


2.5. Standardised Hospital Mortality Index (SHMI)

The SHMI is published by the National Information Centre on a quarterly basis and the reporting period lags approximately 6 months behind the HSMR. The latest SHMI published for the period January to December 2012 was 113.9, as reported in late July 2013. This places the Trust in 134th position nationally out of 142 Trusts and is significantly elevated.

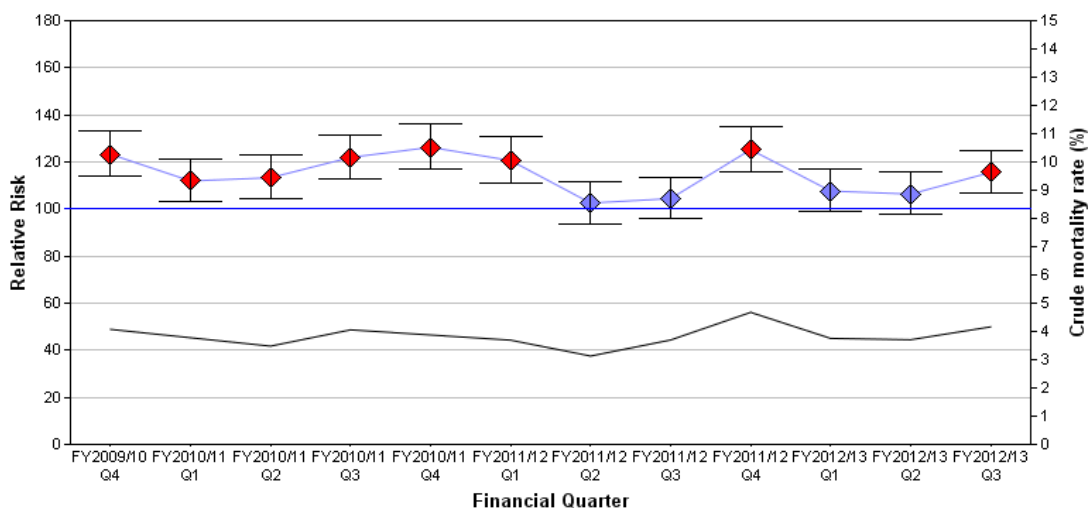
The chart below shows the Trust trend for SHMI, SHMI (adjusted for palliative care by Dr Foster), HSMR and crude mortality for the same time periods.

Figure 9: SHMI (adjusted for palliative care) Apr 11/Mar12 to Jul 12/Jun 13



There has been a slight rise in SHMI but there will be a fall with the next release in October 2013 when the SHMI data for Q4 2011/2 is removed (see Fig.9) and the new SHMI quarter for Q4 2012/3 will be markedly lower. This will be followed by a further fall in January 2014.

Figure 10: Quarterly SHMI



2.5.1 Elevated SHMI Pathways

Figure 11 shows the clinical diagnoses which had a statistically elevated SHMI during the calendar year 2012. These are listed in order of “excess” deaths. This has been calculated by observing differences in actual deaths attributed to that diagnosis compared to number of deaths predicted for that coded case-mix.

The table also details reasons why SHMI is higher than Standardised Mortality Rate (SMR) for certain groups. There is ongoing work with Dr Foster to better understand this discrepancy.

Figure 11

High SHMI Diagnoses Jan-Dec 12	Approx "excess" deaths	% Community deaths rank of 142 Trusts (1=highest)	Reason higher than HSMR	Comments
Pneumonia	64	122	Palliative coding, subgroup methodology	
Acute CVD	33	103	Mostly palliative coding	
UTI	21	16	Mostly community deaths	
Respiratory failure	13	16-21	(Part community, part palliative)	HSMR relatively high
Ca prostate	12	20-58	Part community deaths, part palliative coding	
CF, other resp. disease	11	26-57	(Part community, part palliative)	HSMR relatively high

2.6. CQUIN Pathway Monitoring

Mortality monitoring of 9 pathways currently under review as part of the CQUIN agreement is ongoing. 8 pathways are shown below and the data for 2013/14 are included in Appendix 1. Those pathways in yellow will be monitored by SHMI and those in mauve by HSMR.

Figure 12 CQUINS Pathways

CQUIN Pathways	HSMR 2011/12	HSMR 2012/13	SHMI Jan – Dec '12	HSMR Jan – Dec '12	Crude Mortality Rate
Acute Renal Failure	113	90.3	107.1	95.9	18.6%
Congestive Heart Failure	108.1	100.8	119.2	103.1	17.2%
Septicaemia	122	89.1	114.1	104.9	23.5%
Urinary Tract Infection	106.1	83.2	126.1	92.6	4.8%
Pneumonia (replacing Respiratory Infections)		97.3	121.2	102.7	25.4%
Acute Myocardial Infarction (AMI)		127.6	129.6	117.5	11.6%
Acute Cerebrovascular Disease (includes stroke)		96.1	128.0	98.2	24.0%
Fracture of Neck of Femur (#NOF)		82.5	123.2	90.1	10.5%

The 9th CQUIN pathway is for 'Unexpected ITU Admission for Patients who deteriorate in hospital'. An initial audit is currently being undertaken and pathway changes are to be agreed by December 2013. As it is impossible to monitor this pathway through SHMI or HSMR, other indicators are to be agreed, once the initial audit is complete.

2.7 Update by Specific Pathways

2.7.1 Acute Myocardial Infarction

Acute myocardial infarction (AMI) has been included in light of the strategic decision to be taken about location of 24/7 PPCI sites in Herts & Beds and is included in the CQUIN pathway monitoring report for this year. Whilst latest rolling year mortality for neither SHMI or HSMR are statistically elevated both are above average (see Figure 11, 12 and Appendix 1) HSMR has deteriorated slightly in 2013/4. A number of clinical improvements are in train to address this:

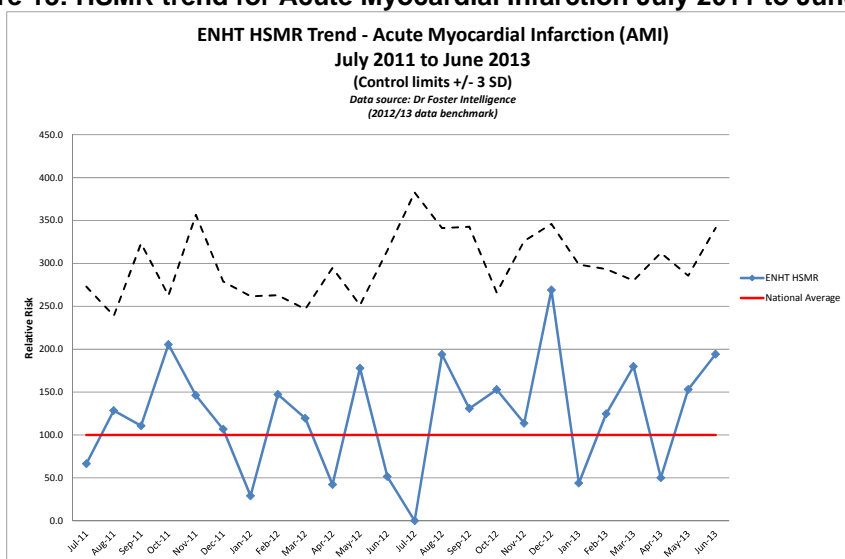
- Clinical pathway audit is scheduled for completion by end of September.
- 3 new Consultants will be in post by October 2013.
- Business case for Cardiology Nurse specialist
- Recruitment and training programme in progress to staff cath lab 24/4
- Ward reconfiguration August 2013.
- Additional medical staff out of hours since August 2013.

A recent joint clinical and coding review of a sample of deceased patient notes has identified a number of issues including inadequate clinical documentation with consequent coding inaccuracies and PAS data entry issues. No obvious clinical care issues were identified. Actions to address this include:

- Working with clinicians to improve clinical documentation
- Training for ward clerks to improve PAS data entry
- Identifying a dedicated coder to work closely with the cardiology team
- Reviewing a random sample of spells coded as AMI on a monthly basis
- Automatic flagging to the Clinical Coding Encoder software prompting further investigation when a diagnosis of acute coronary syndrome has been used.

The chart below shows the HSMR trend for AMI over the past two years.

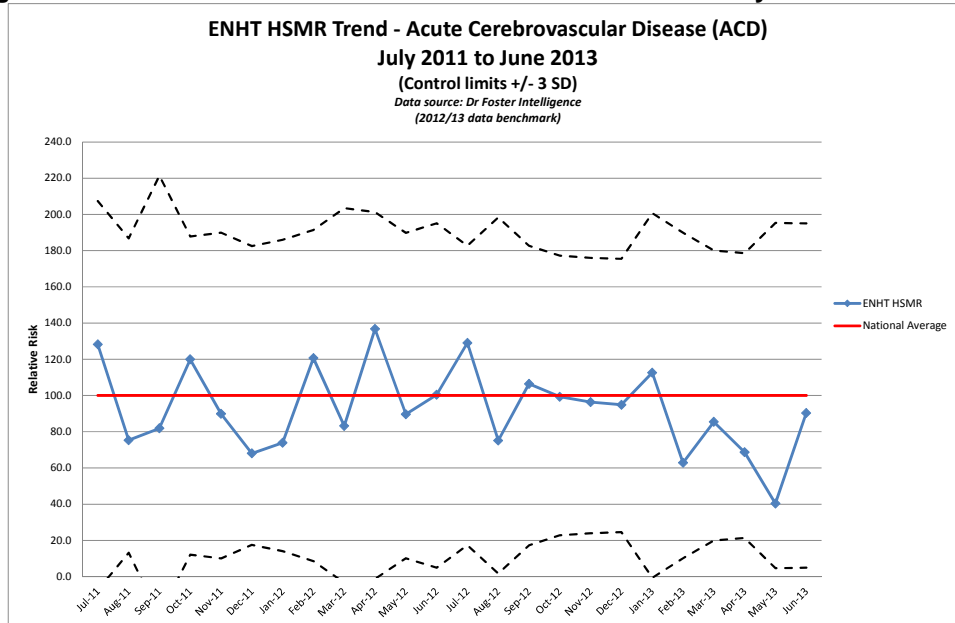
Figure 13: HSMR trend for Acute Myocardial Infarction July 2011 to June 2013



2.7.2 Acute Cerebrovascular Disease (Stroke)

Stroke has been included in light of the strategic decision to be taken about location of hyper-acute stroke unit (HASU) in Herts & Beds and is included in the CQUIN pathway monitoring report for this year. SHMI for January – December was significantly elevated (see Figures 11 & 12) but there has been a dramatic improvement since April 2013 (see Appendix 1) and SHMI improvement will follow. The chart below shows the HSMR trend for Stroke over the past two years.

Figure 14: HSMR trend for Acute Cerebrovascular Disease July 2011 to June 2013



A number of ongoing clinical improvements will make further improvement:

- Clinical pathway audit is scheduled for completion by end of September.
- 1 new Consultant recruited
- Further Consultant appointment panel scheduled for late September.
- Additional medical staff out of hours since August 2013.

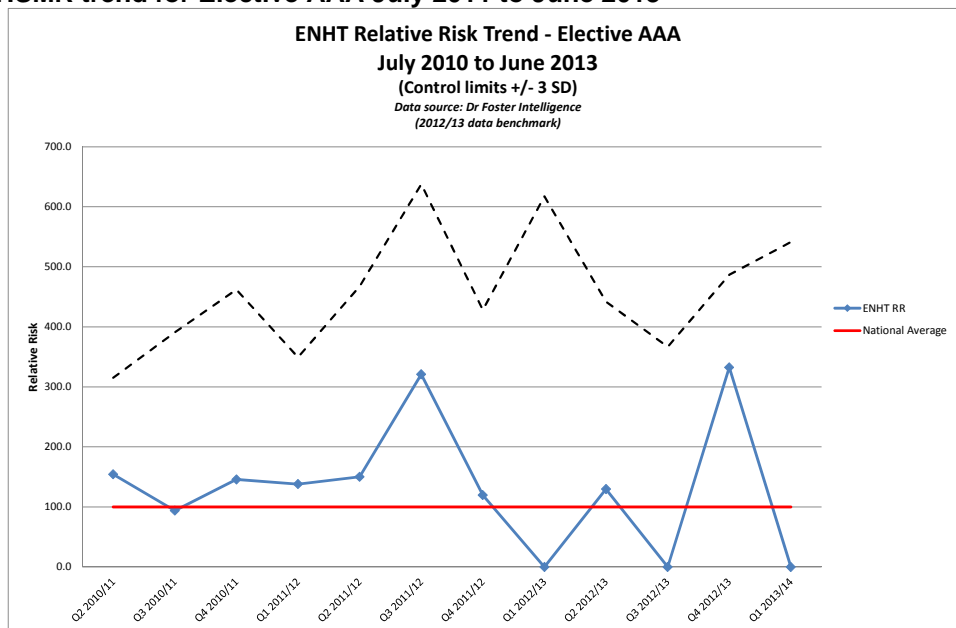
Joint clinical and coding analysis of all patient spells discharged during 2012 where a diagnosis has been recorded for stroke for any episode. It showed that 35% had a primary diagnosis made in the 2nd or subsequent episode. Further review is underway but initial findings are similar to those for AMI (4.71) and actions identified. Monthly meetings will commence in October between the Stroke team and a dedicated clinical coder. Stroke data from the National Stroke Audit (SSNAP) will be reconciled with clinically coded data and anomalies investigated.

2.7.3 Elective Abdominal Aortic Aneurysm Repair (AAA)

The Vascular service is currently scheduled to centralise to Watford, in part because of historical mortality concerns at the Lister Hospital following elective AAA surgery. The chart below shows a quarterly relative risk trend for elective AAA procedures and performance is now good (see Figure 14).

The SHMI (which includes elective and non-elective activity) for the CCS group aortic, peripheral and visceral artery aneurysms for the period January to December 2012 is 81.7; the relative risk for all AAA procedures for the same period was 56.7.

Figure 15: HSMR trend for Elective AAA July 2011 to June 2013



2.7.4. Respiratory

This group has been included as the vast majority of “excess” deaths in Figure 11 occurred in respiratory conditions. There are 3 significantly elevated SHMI pathways for 2012 (pneumonia, respiratory failure and CF, other respiratory conditions). For the latest rolling year Acute Bronchitis is the only significantly elevated HSMR diagnosis at 146.3. The respiratory situation has been a cause for concern and the following actions are in progress:

- Respiratory service centralised to the Lister August 2013
- Non-invasive ventilation centralised to the Lister August 2013
- Proposed recruitment of additional respiratory Consultants for acute chest team.
- Ward reconfiguration August 2013.
- Additional medical staff out of hours since August 2013.
- Clinical pathway audits for pneumonia to be repeated

A clinical and coding review of Respiratory deceased patient notes has identified similar findings to those found in AMI (4.7.1). It has been agreed that a further review will be taken of a sample of 15-20 patient notes from each of 4 respiratory diagnosis groups for the 1st quarter of 2013/14

2.8. CQC CUSUM Alerts

There have been no new CQC CUSUM alerts since April 2012.

2.9. Summary of Key Issues

- Crude mortality is has steadily reduced since December 2012.
- Overall HSMR performance continues to improve

- SHMI is significantly elevated but will reduce with the next 2 releases.
- Numerous clinical improvements have been put in place detailed in this paper and the Improving Outcomes paper presented to Board in July 2013.
- Improvement and monitoring of 8 CQUIN mortality pathways is on-going – an increase in diagnostic groups from last year.
- Audit has commenced on a further clinical pathway, 'Unexpected ITU Admission for Patients who deteriorate in hospital'. Indicators for monitoring progress have yet to be agreed.
- Mortality monitoring is on-going with regular reporting to DEC, RAQC, Board and PCT
- Regular joint meetings with NHS Hertfordshire to improve mortality rates
- Attendance at the East of England NHS Dr Foster User Group meetings.

Appendix 1 CQUIN Pathway Monitoring

1 Acute Cerebrovascular Disease

Full year 2012/13: HSMR – Relative risk 96.1

Crude mortality 24.1%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	129.0	17	31.5%	128.0
Aug-12	75.2	7	12.1%	
Sep-12	106.4	14	29.8%	HSMR Jan - Dec '12
Oct-12	99.3	15	24.6%	
Nov-12	96.3	15	30.0%	100.3
Dec-12	94.9	15	34.9%	HSMR Crude Mortality Jan - Dec '12
Jan-13	112.6	10	23.3%	
Feb-13	62.8	7	14.9%	24.0%
Mar-13	85.5	12	17.9%	
Apr-13	68.7	10	19.6%	
May-13	40.4	4	7.7%	
Jun-13	90.4	9	21.4%	
Jul 12/Jan 13	89.6	135	22.0%	

2 Acute Myocardial Infarction

Full year 2012/13: HSMR – Relative risk 127.6

Crude mortality 12.7%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	0.0	0	0.0%	129.6
Aug-12	193.8	3	17.7%	
Sep-12	130.9	2	10.0%	HSMR Jan - Dec '12
Oct-12	152.9	5	17.2%	
Nov-12	113.6	2	8.0%	118.1
Dec-12	269.0	4	25.0%	HSMR Crude Mortality Jan - Dec '12
Jan-13	43.8	1	3.9%	
Feb-13	124.6	3	11.5%	11.6%
Mar-13	179.8	5	20.8%	
Apr-13	50.1	1	4.2%	
May-13	153.1	4	13.3%	
Jun-13	194.2	3	14.3%	
Jul 12/Jan 13	135.6	33	12.2%	

3 Acute Renal Failure

Full year 2012/13: HSMR – Relative risk 90.3

Crude mortality 15.9%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	64.7	2	8.7%	107.1
Aug-12	119.0	4	18.2%	
Sep-12	137.3	5	18.5%	HSMR Jan - Dec '12
Oct-12	147.5	8	32.0%	
Nov-12	0.0	0	0.0%	102.6
Dec-12	108.1	4	22.2%	HSMR Crude Mortality Jan - Dec '12
Jan-13	52.0	3	10.0%	
Feb-13	117.9	4	16.7%	18.6%
Mar-13	102.3	4	16.0%	
Apr-13	136.0	4	22.2%	
May-13	78.9	3	14.3%	
Jun-13	110.5	3	12.5%	
Jul 12/Jan 13	100.8	44	16.1%	

4 Congestive Heart Failure

Full year 2012/13: HSMR – Relative risk 100.8

Crude mortality 16.7%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	100.0	6	14.3%	119.2
Aug-12	136.3	11	32.4%	
Sep-12	74.1	4	10.5%	HSMR Jan - Dec '12
Oct-12	95.6	4	15.4%	
Nov-12	79.1	5	13.5%	106.1
Dec-12	116.8	4	22.2%	HSMR Crude Mortality Jan - Dec '12
Jan-13	82.8	4	14.3%	
Feb-13	76.6	2	8.0%	17.2%
Mar-13	157.4	8	25.0%	
Apr-13	169.5	8	25.0%	
May-13	46.2	3	8.8%	
Jun-13	24.2	1	3.7%	
Jul 12/Jan 13	97.9	60	16.1%	

5 Fracture of Neck of Femur

Full year 2012/13: HSMR – Relative risk 82.5

Crude mortality 10.6%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	48.3	2	5.1%	123.2
Aug-12	113.4	4	9.5%	
Sep-12	107.6	5	17.9%	
Oct-12	165.0	6	12.8%	95.0
Nov-12	60.7	2	5.6%	
Dec-12	102.6	6	15.0%	10.5%
Jan-13	137.9	8	21.1%	
Feb-13	54.7	4	7.7%	
Mar-13	57.9	3	6.7%	
Apr-13	90.2	4	9.3%	
May-13	74.5	4	10.0%	
Jun-13	65.9	3	6.3%	
Jul 12/ Jun 13	88.3	51	10.2%	

6 Pneumonia

Full year 2012/13: HSMR – Relative risk 97.3

Crude mortality 21.9%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality		SHMI Jan - Dec '12
	September Update	Count	Rate	
Jul-12	103.4	23	23.0%	121.2
Aug-12	92.4	15	17.9%	
Sep-12	103.3	17	22.1%	
Oct-12	116.0	28	28.0%	105.1
Nov-12	114.7	26	25.5%	
Dec-12	115.9	29	25.0%	25.4%
Jan-13	106.5	33	20.0%	
Feb-13	56.3	15	13.0%	
Mar-13	98.8	27	20.2%	
Apr-13	86.0	21	18.0%	
May-13	96.9	17	16.2%	
Jun-13	80.4	13	20.0%	
Jul 12/ Jun 13	97.8	264	20.6%	

7 Septicaemia

Full year 2012/13: HSMR – Relative risk 89.1

Crude mortality 21.3%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality	
	September Update	Count	Rate
Jul-12	71.1	2	13.3%
Aug-12	178.4	6	31.6%
Sep-12	125.0	3	25.0%
Oct-12	60.6	2	10.5%
Nov-12	33.7	1	6.7%
Dec-12	105.0	4	23.5%
Jan-13	140.9	5	35.7%
Feb-13	60.7	2	15.4%
Mar-13	37.0	1	7.7%
Apr-13	65.9	2	14.3%
May-13	45.4	1	7.7%
Jun-13	33.1	1	5.9%
Jul 12/ Jun 13	82.3	30	16.6%

SHMI Jan - Dec '12
114.1

HSMR Jan - Dec '12
120.6

HSMR Crude Mortality Jan - Dec '12
23.5%

8 Urinary Tract Infection

Full year 2012/13: HSMR – Relative risk 83.2

Crude mortality 4.6%

For July 2012 to June 2013:

Period	HSMR - Relative Risk	HSMR Crude Mortality	
	September Update	Count	Rate
Jul-12	120.5	6	4.2%
Aug-12	108.5	6	5.0%
Sep-12	88.5	5	4.2%
Oct-12	61.3	5	4.0%
Nov-12	46.2	3	2.6%
Dec-12	24.5	1	1.2%
Jan-13	80.1	8	6.0%
Feb-13	92.0	7	6.4%
Mar-13	39.4	2	1.9%
Apr-13	111.9	7	5.9%
May-13	136.6	7	7.1%
Jun-13	230.4	9	7.6%
Jul 12/ Jun 13	90.6	66	4.7%

SHMI Jan - Dec '12
126.1

HSMR Jan - Dec '12
94.3

HSMR Crude Mortality Jan - Dec '12
4.8%