

DATE	29 th April 2014
REPORT FOR	Trust Board of Directors – Part A
REPORT FROM	Dr Mark Withers, Medical Director
CONTACT OFFICER	Jeremy Daws, Assistant Head of Quality Assurance
SUBJECT	Monthly Mortality Report
BACKGROUND DOCUMENT (IF ANY)	Monthly Quality Report
REPORT PREVIOUSLY CONSIDERED BY & DATE(S)	Mortality Performance Committee – 1 st April 2014
EXECUTIVE COMMENT (INCLUDING KEY ISSUES OF NOTE OR, WHERE RELEVANT, CONCERN AND / OR NED CHALLENGE THAT THE BOARD NEED TO BE MADE AWARE OF)	The Monthly Mortality Report outlines progress towards meeting the Trust’s objective of reducing its mortality ratio as agreed by the Board.
HAVE THE STAFF SIDE BEEN CONSULTED ON THE PROPOSALS?	N/A
HAVE THE RELEVANT SERVICE USERS/CARERS BEEN CONSULTED ON THE PROPOSALS?	N/A
ARE THERE ANY FINANCIAL CONSEQUENCES ARISING FROM THE RECOMMENDATIONS?	N/A
IF YES, HAVE THESE BEEN AGREED WITH THE RELEVANT BUDGET HOLDER AND DIRECTOR OF FINANCE, AND HAVE ANY FUNDING ISSUES BEEN RESOLVED?	N/A
ARE THERE ANY LEGAL IMPLICATIONS ARISING FROM THIS PAPER THAT THE BOARD NEED TO BE MADE AWARE OF?	N/A
WHERE RELEVANT, HAS PROPER CONSIDERATION BEEN GIVEN TO THE NHS CONSTITUTION IN ANY DECISIONS OR ACTIONS PROPOSED?	N/A
WHERE RELEVANT, HAS PROPER CONSIDERATION BEEN GIVEN TO SUSTAINABILITY IMPLICATIONS (QUALITY & FINANCIAL) & CLIMATE CHANGE?	N/A
THE PROPOPSAL OR ARRANGEMENTS OUTLINED IN THIS PAPER SUPPORT THE ACHIEVEMENT OF THE TRUST OBJECTIVE(S) AND COMPLIANCE WITH THE REGULATORY STANDARDS LISTED	N/A
ACTION REQUIRED BY THE BOARD	The Board is asked to note the contents of the Mortality Report

Directorate of Clinical & Quality Assurance

Monthly Mortality Report

March 2014

Board Report – Mortality Summary

March 2014

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1.0 INTRODUCTION

The monthly mortality report seeks to provide an update on the most recent information available to the Trust and the different work streams underway around this area to support the focus of reducing the Trust's current mortality ratio.

2.0 BOARD ACTION

The Board is asked to:

- Review the performance against the range of targets/indicators included within the report.

3.0 RECOMMENDATIONS

The Board's attention is drawn to the following key points:

- The Trust's provisional SHMI (moving annual total) for the year to November 2013 is 107. The provisional SHMI at Grimsby and Scunthorpe is 109 and 106 respectively. The Trust SHMI at 107 is within the "as expected" range and is the 28th worst nationally.
- The Trust's provisional SHMI for weekend admissions is 8 points higher than the SHMI for weekday admissions (113 week-end/105 week-day). The difference at Grimsby is 15 (105/120). The provisional SHMI for weekend admissions at Scunthorpe is 1 point lower than the SHMI for weekday admissions (105/106).
- The provisional In-Hospital SHMI is 101. The Out-of-Hospital SHMI (deaths within 30 days of discharge) is 121. The in and out of hospital SHMI at Grimsby is 104 and 123 respectively and at Scunthorpe 100 and 120 respectively.

Mortality Improvement – Summary Progress Report March 2014: (Data to November 2013)

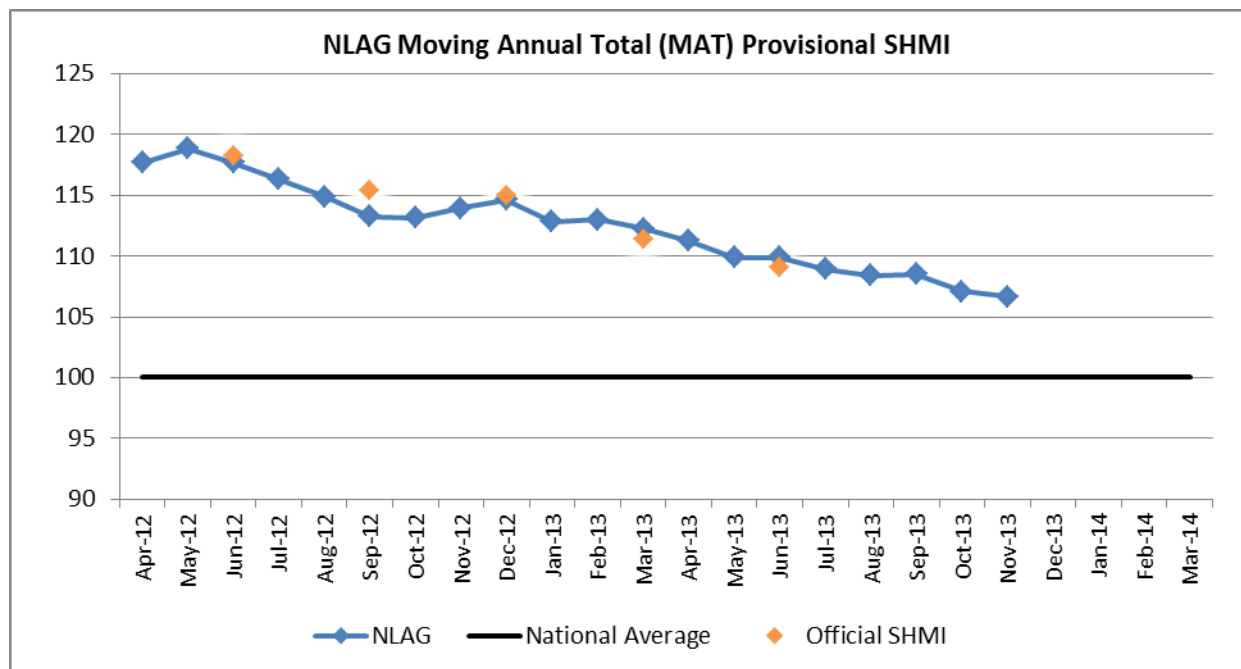
This summary sets out the Trust’s latest position in terms of mortality improvement. The report measures mortality performance using the Summary Hospital Level Mortality Indicator (SHMI) – the official Department of Health measure used to measure risk adjusted mortality. This compares the actual mortality position of the Trust, based on the number of deaths in hospital and in the 30 days following admission, with a calculated ‘expected deaths’ rate. The SHMI is usually based on a full year of data and is recalculated every three months. There are three bandings in the SHMI, with mortality rates classed as lower than expected, as expected, and higher than expected. If a Trust is in the ‘higher than expected’ range it is classed as an ‘outlier’.

The official national data publications are released quarterly, six months after the event. The Trust therefore reports its performance to its Board every month using provisional data published by the University of Birmingham through its Hospital Evaluation Data system (HED). This is normally three months behind the current position, and has been validated as virtually identical to the official published data.

Current SHMI mortality position:

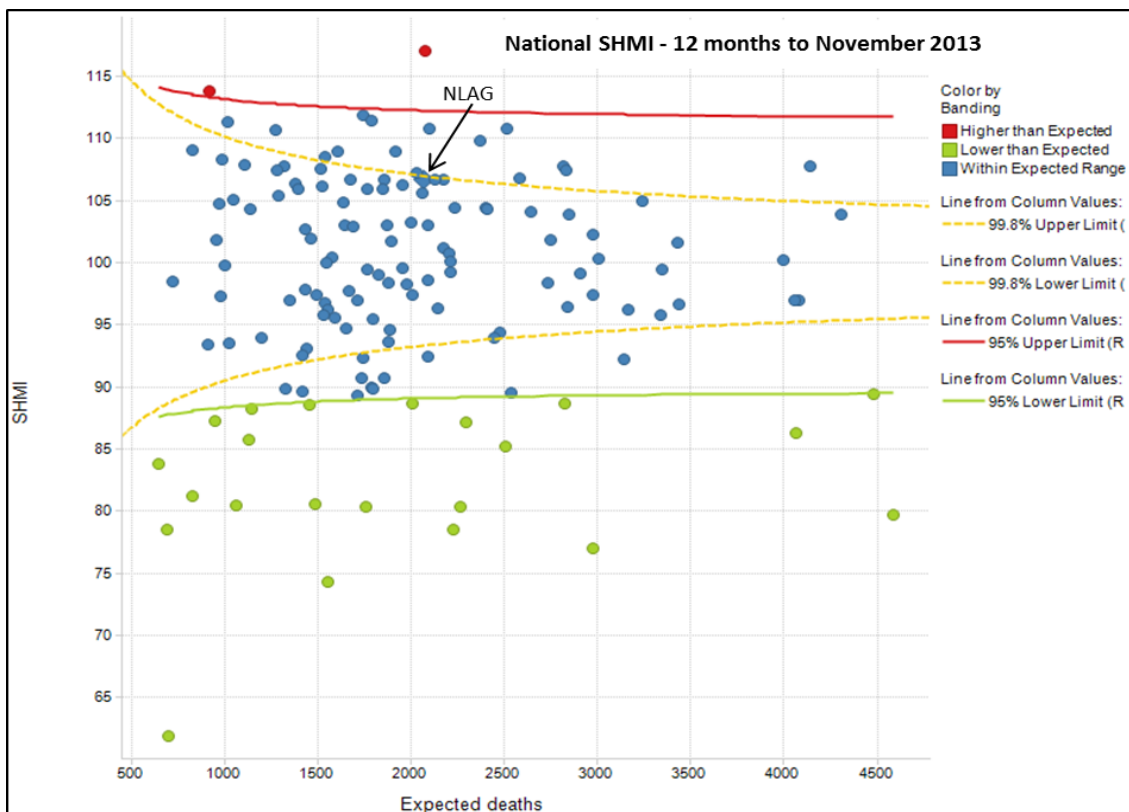
The Trust’s latest SHMI position (using the HED system for the period December 2012 to November 2013) is a score of 106.6. This is within the ‘as expected’ range, and is a slight improvement on the November 2012 to October 2013 position (107.1). This continues a trend of improvement that has moved the Trust away from the ‘higher than expected’ band into the ‘as expected’ band.

The trend over recent months is set out in the following graph:



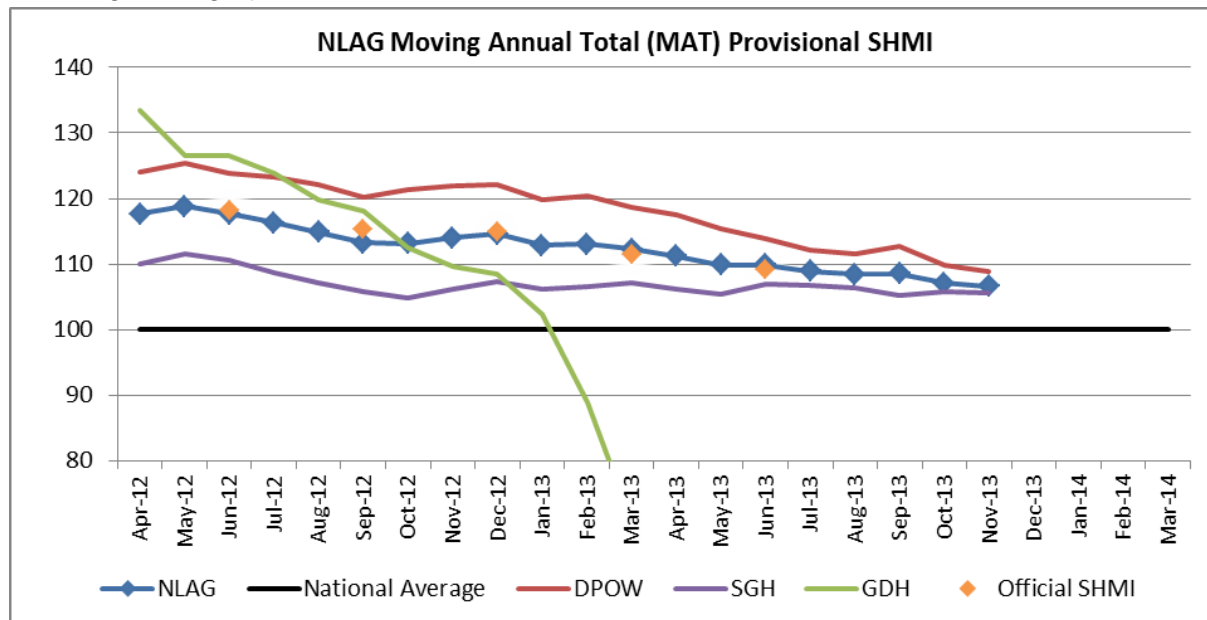
NLAG - relative mortality performance:

This performance leaves the Trust 28th worst of the 141 NHS provider organisations included within the mortality data set. This is still some way from where the Trust wishes to be – but the Trust is in the “within expected range” banding. The following “funnel plot” graphically represents this:



Site breakdown of mortality performance

The Trust has analysed the performance between sites. The position is shown in the following trend graph:



The trend graph shows some interesting differences between sites. Of the three hospitals Grimsby has had worse mortality ratings over the period, but has demonstrated an overall trend of improvement. Scunthorpe has shown a trend of slight improvement over the period. Goole has demonstrated major improvements following the changes made to the medical service at Goole in the summer of 2012, giving it one of the best mortality rates in the country.

The following table shows the provisional SHMI, using the HED system, for the year to November 2013 split by hospital site:

Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Grimsby	29416	1132	1040	92	109	102.6	115.4
Scunthorpe	26781	1071	1014	57	106	99.4	112.1
Goole	932	2	13	-11	15	1.7	53.8
Grand Total	57129	2205	2068	137	107	102.2	111.2

Grimsby has a higher SHMI score (109) compared to Scunthorpe (106) and Goole (15).

The 'variation from expected' figure is what is often referred to as 'excess deaths' and is the difference between the actual number of deaths and the number predicted by the SHMI model. This figure does not represent deaths that were preventable and should not be interpreted as measure of avoidable deaths. Sir Bruce Keogh, the NHS Medical Director, has previously stated that it is "clinically meaningless and academically reckless" to treat such figures as a measure of avoidable deaths."

Mortality performance breakdown by high level diagnosis group:

The following high level groups have been derived by combining the numerous official SHMI diagnoses into a more manageable number of high level groupings. This process was undertaken with clinical input.

The following table shows the top ten high level diagnosis groups for 'variation from expected deaths' for the provisional SHMI moving annual total to November 2013 at Trust level, based primarily on the diagnosis on admission.

Trust "Top Ten" SHMI high level diagnosis groups (SHMI year to November 2013):

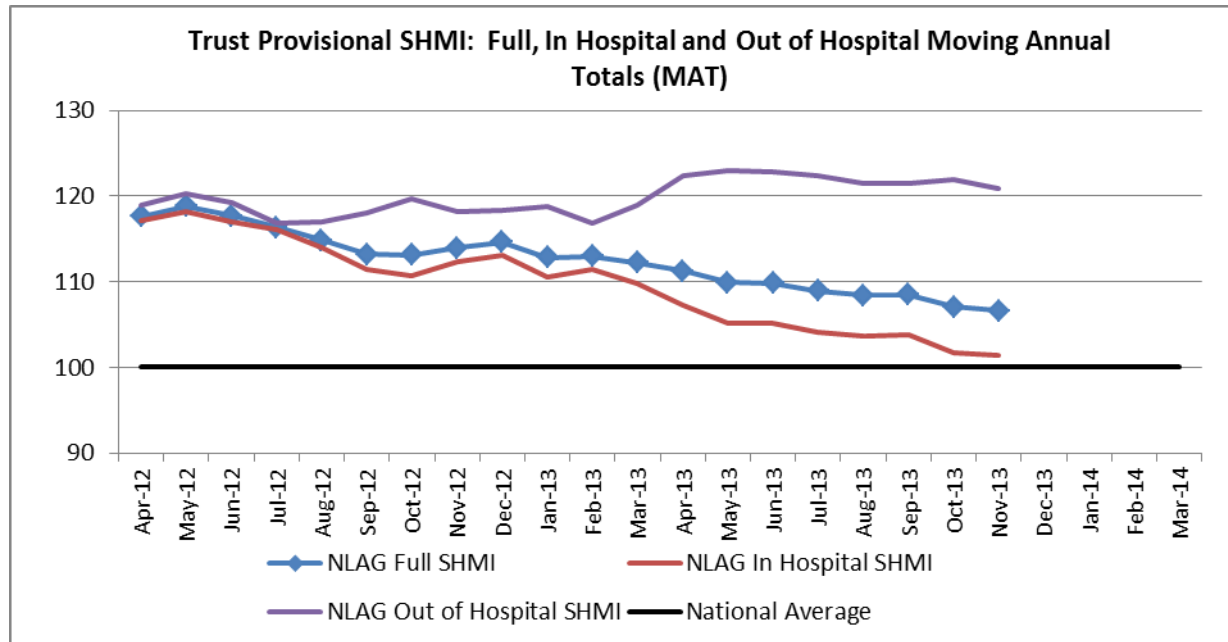
Diagnosis Group	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Infection	4580	288	226	62	127	113.0	142.9
Respiratory	6418	616	577	39	107	98.5	115.5
Renal	908	152	130	22	117	99.4	137.5
Gastroenterology	6993	262	241	21	109	96.0	122.7
Stroke	1311	143	129	14	111	93.6	130.8
Trauma and Orthopaedics	4649	150	136	14	110	93.3	129.3
DVT/PE	262	14	6	8	219	119.4	366.8
Urinary Tract	1311	15	11	4	140	78.4	231.2
Haematology	188	10	6	4	166	79.4	304.9
Diabetes and Endocrine	680	25	22	3	115	74.2	169.2

This highlights the major clinical areas where the Trust is focussing attention on delivering improvements. Some of the diagnosis groups have a small number of patients. This can have a misleading impact on the SHMI score, as a very low number of deaths can cause a very high SHMI figure. In these cases, the Trust must consider a variety of other factors to see if there are any issues that need further investigation.

Mortality performance – Analysis of In and Out of Hospital SHMI Trending Graph

The provisional SHMI is made up of two elements (1) the in-hospital deaths and (2) those deaths occurring following hospital discharge, within 30 days in the community. These two elements are inter-related. By splitting this information into the two component parts, the Trust is seeking to determine where additional collaborative work is necessary. This is therefore the basis of efforts to work closely together as a healthcare community to tackle any issues highlighted by mortality indicators.

The following graph shows the moving annual total scores for the full SHMI, the in hospital SHMI and the out of hospital SHMI for the Trust.



The above chart shows the reduction over time of the in-hospital element of the SHMI which on the whole mirrors the reduction of the full SHMI itself as illustrated on the preceding pages. It also demonstrates a widening gap between the in and out of hospital mortality. Using this as the basis, the Trust is actively seeking to work closely with the wider healthcare community to examine this area in more detail.

Improvement projects:

Key developments in February included:

- Following a comprehensive review of inpatients identified with hospital acquired pneumonia, the Trust has been able to determine incidence of this against peer other Trusts in the UK and as a result have been better able to design a root cause analysis process to identify any themes that can be addressed in greater detail and learn the lessons from these.
- The already implemented sepsis care bundle has been used as the basis for a new pathway for patients identified as having sepsis following their admission to hospital. This pathway is currently being piloted on selected in-patient wards.

This section...

➔ 4.0 MORTALITY INDICATORS

- 4.1 Mortality Indicators Dashboard
- 4.2 Crude Mortality and Number of Deaths
- 4.3 Summary Hospital-Level Mortality Indicator (SHMI) – Nationally Published Data
- 4.4 Summary Hospital-Level Mortality Indicator (SHMI) – H.E.D Provisional Data
- 4.5 Weekday & Weekend SHMI
- 4.6 Provisional SHMI: Elective and Non Elective split
- 4.7 Provisional SHMI: In and Out of Hospital split
- 4.8 CCG Level SHMI for NLAG Activity
- 4.9 Risk Adjusted Mortality Index (RAMI)
- 4.10 Hospital Standardised Mortality Ration (HSMR)

- 5.0 Clinical Coding Indicators
- 6.0 Update on Mortality Trigger Tool Work
- 7.0 Update on Pathway Specific Mortality Action Groups
- 8.0 Nursing Staffing Levels
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4.0 MORTALITY INDICATORS

The following section of the Trust's Mortality Report is compiled by Information Services. It contains high level analysis of NLAG's crude mortality, Summary Hospital Level Mortality Indicator (SHMI), Risk Adjusted Mortality Index (RAMI) and Hospital Standardised Mortality Ratio (HSMR).

Executive Summary:

The data contained within this section illustrates:

- The Trust's Crude Mortality Rate (moving annual total) is reducing marginally – from 1.61% for the year to January 2013 to 1.50% for the year to January 2014. It is slightly higher than the peer average – the peer for the year to January 2014 was 1.49%.
- The majority of deaths are non-elective. The Trust's Non Elective Crude Mortality Rate (moving annual total) is reducing marginally – from 3.48% for the year to January 2013 to 3.29% for the year to January 2014. It is higher than the peer average – the peer for the year to January 2014 was 3.01%.
- The most recent Summary Hospital-Level Mortality Indicator (SHMI) for the period of July 2012 – June 2013, which includes community deaths within 30 days of discharge, was 109 – which has reduced from the score of 111 in the previous publication (for the period April 2012 – March 2013).
- The Trust's provisional SHMI (moving annual total) for the year to November 2013 is 107. Grimsby's score is 109, Scunthorpe's score is 106 and Goole's is 15. The national average figure is 100. The score of 107 is within the "as expected" range and is the 28th worst national score.
- The top five high level diagnosis groups with the highest variation from the expected number of deaths are infection, respiratory, renal, gastroenterology and stroke. These are, in the main, the diagnoses on admission.
- The provisional SHMI for weekend admissions is 8 points higher than the SHMI for weekday admissions (113 v 105).
- The provisional SHMI for non-elective admissions is 8 points higher than the score for elective admissions (107 v 99).
- The provisional In Hospital SHMI is 101. The Out of Hospital SHMI being 121.
- The Trust's Risk Adjusted Mortality Indicator (moving annual total) for the year to January 2014 was 88 – a decrease of one point from the previous score. Note the national average was 85 and the local peer of similar Trusts was 91.
- The Dr Foster Hospital Guide, published in December 2013, indicated the Trust's HSMR was 109 for the twelve months to March 2013, placing the Trust within the 'higher than expected' banding. Using local data, the HSMR for the twelve months to December 2013 is 105.

Much of the following analysis is benchmarked against a similar group of peer trusts. Peer average benchmarks referred to in this document relate to these Trusts, unless otherwise stated. We have also included the national benchmark where possible.

4.1 Mortality Indicators Dashboard

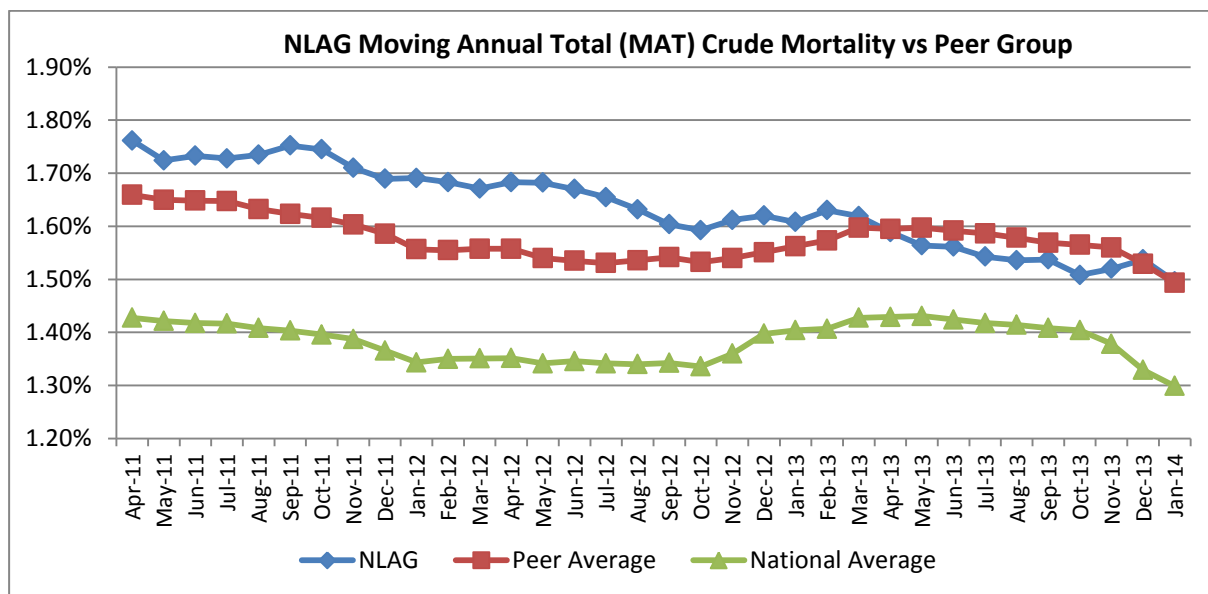
MORTALITY INDICATORS SUMMARY DASHBOARD: MARCH 2014							
Indicator			Feb13-Jan14	Prev 12 mths	Annual Change	Peer	Compared to Peer
CRUDE MORTALITY							
M1	Crude Mortality Rate	Trust	1.50%	1.61%	✓ -0.11%	1.49%	✗ 0.01%
		DPOW	1.58%	1.71%	✓ -0.13%		✗ 0.09%
		SGH	1.58%	1.65%	✓ -0.07%		✗ 0.09%
		GDH	0.09%	0.46%	✓ -0.37%		✓ -1.40%
M2	Non Elective Crude Mortality Rate	Trust	3.29%	3.48%	✓ -0.18%	3.01%	✗ 0.28%
		DPOW	3.41%	3.58%	✓ -0.17%		✗ 0.40%
		SGH	3.19%	3.32%	✓ -0.13%		✗ 0.18%
		GDH	1.95%	5.98%	✓ -4.03%		✓ -1.06%
M3	Number of Deaths	Trust	1541	1646	✓ -105	n/a	n/a
		DPOW	794	863	✓ -69		
		SGH	742	755	✓ -13		
		GDH	5	28	✓ -23		
Nationally Published SHMI							
M5	Summary Hospital Level Mortality Indicator (SHMI)	Trust	109	23rd worst	111	15th worst	8 places
Provisional SHMI (HED sourced)							
M6	Provisional SHMI	Trust	107	114	✓ -7	100	✗ 7
		DPOW	109	122	✓ -13		✗ 9
		SGH	106	106	✗ 0		✗ 6
		GDH	15	110	✓ -95		✓ -85
RAMI							
M7	Risk Adjusted Mortality Index (RAMI) - All Conditions	Trust	88	102	✓ -14	91	✓ -3
HSMR							
M8	Hospital Standardised Mortality Ratio (HSMR)	Trust	105	111	✓ -6	100	✗ 5

Source: Information Services

4.2 Crude Mortality and Number of Deaths

NLAG Moving Annual Total (MAT) Crude Mortality Rate v Peer

The first graph in this crude mortality section shows the Moving Annual Totals (MAT) for the NLAG crude mortality rate against peer. This includes all deaths. A MAT is the sum of the individual twelve monthly figures up to and including the reporting month e.g. twelve months to January 2014. This methodology helps to obtain a trend with less variance. A crude mortality rate is simply the number of deaths divided by the number of discharges expressed as a percentage. The discharges in the methodology exclude well babies.

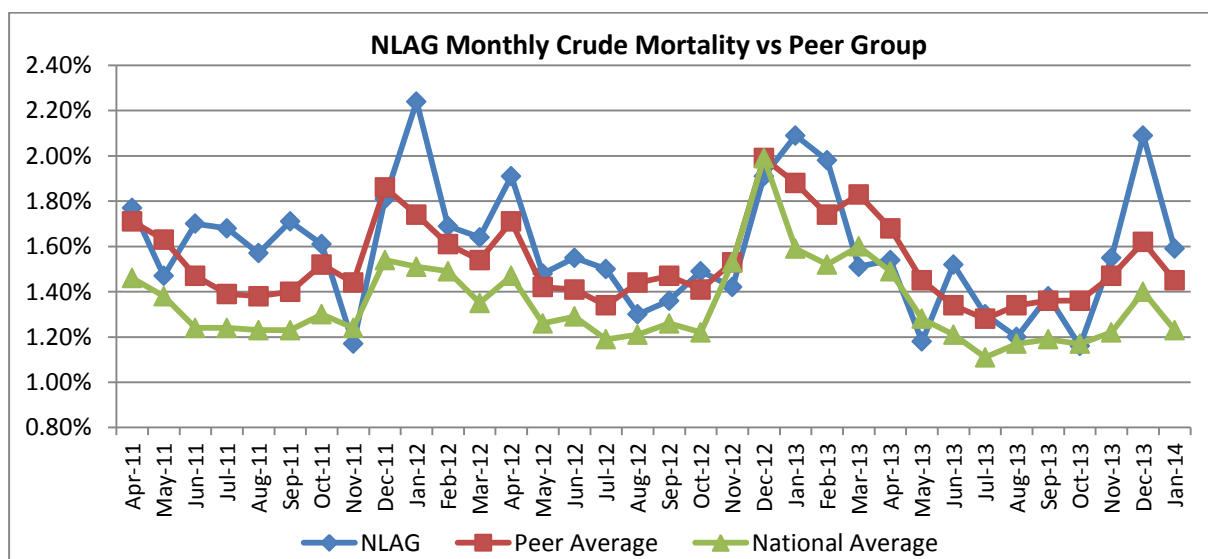


Source: Information Services / CHKS

Comment: For the twelve months to January 2014, the crude mortality rate for the Trust was 1.50%, a decrease of 0.11% compared to the rate of 1.61% for the twelve months to January 2013. Following a period of being better than our peer group, between the twelve months to April 2013 and the twelve months to November 2013, NLAG’s performance has recently been slightly worse than peer. The gap to the national peer is still evident. For the twelve months to January 2014 there were 1541 deaths in hospital.

NLAG Monthly Crude Mortality Rate v Peer

The following graph shows the monthly trend of Trustwide crude mortality rates against peer.



Source: Information Services / CHKS

Comment: The crude rate in January 2014 was 1.59%, an increase of 0.50% from the rate of 2.09% in January 2013. Note the winter peaks across the years in the graph; higher

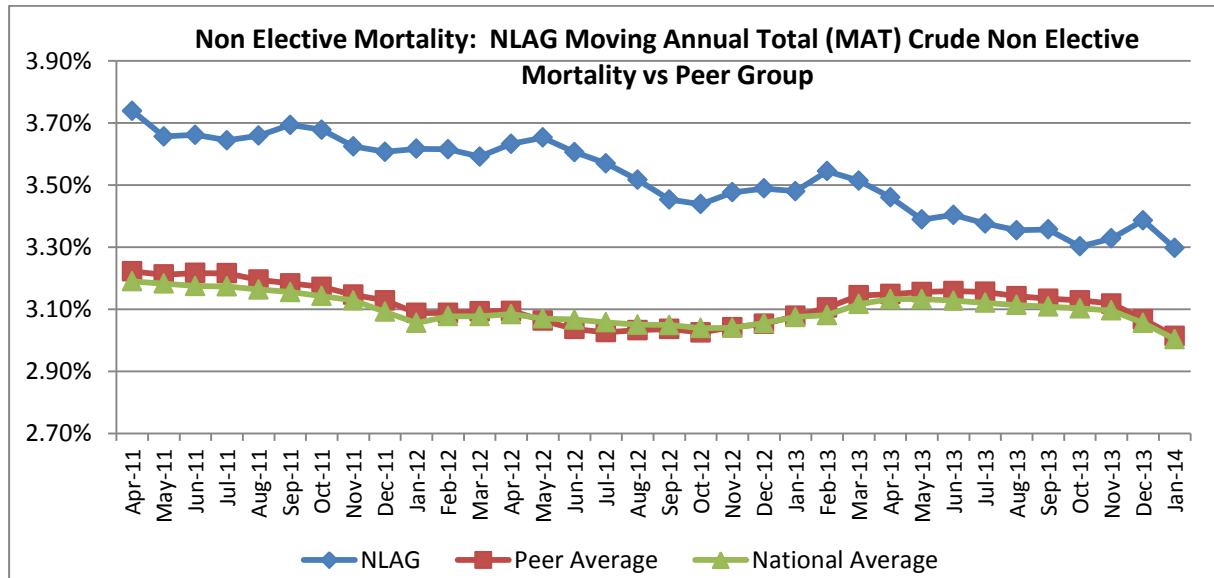
mortality rates are expected in winter months.

Non Elective Crude Mortality

As the majority of deaths occur within non elective patient admissions, the following section looks at non elective crude mortality.

NLAG Moving Annual Total (MAT) Non Elective Crude Mortality Rate v Peer

The following graph shows the Moving Annual Totals (MAT) for the NLAG non elective crude mortality rate against peer.

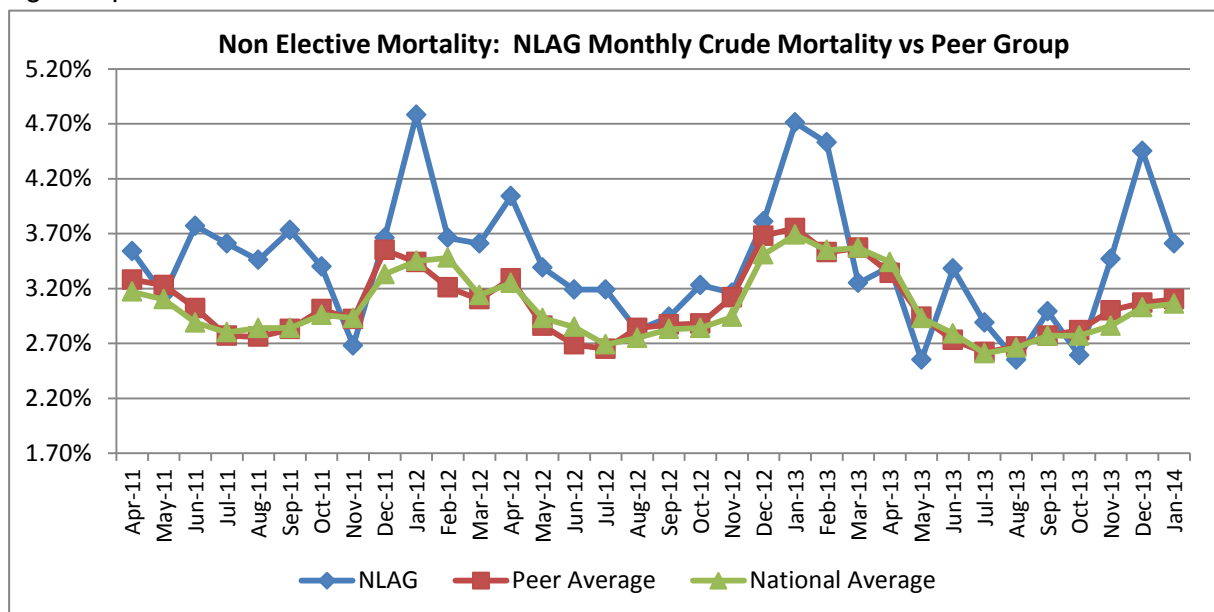


Source: Information Services / CHKS

Comment: Note that for all months NLAG’s non elective crude mortality rate has been above peer. The rate is decreasing over time. The crude non elective mortality rate for the twelve months to January 2014 was 3.29%, a decrease of 0.18% (rounded to two decimal places) from the rate of 3.48% for the twelve months to January 2013. For the twelve months to January 2014 there were 1513 non elective deaths.

NLAG Monthly Non Elective Crude Mortality Rate v Peer

The following graph shows the monthly trend of Trustwide non elective crude mortality rates against peer.



Source: Information Services / CHKS

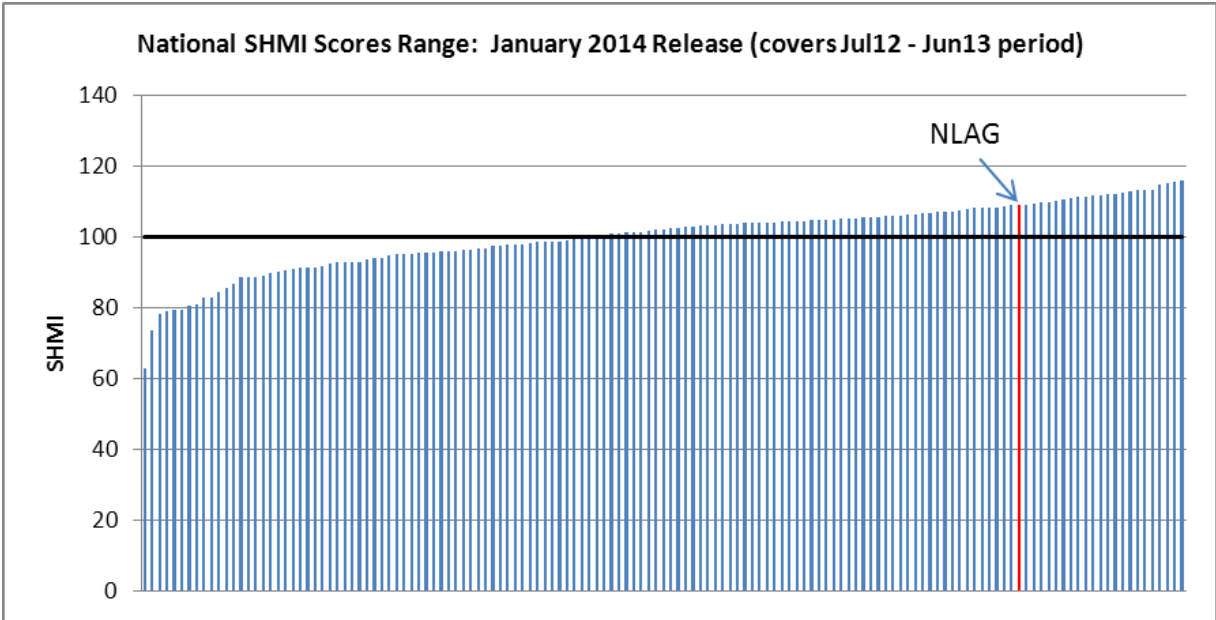
Comment: The crude rate in January 2014 was 3.61%, a decrease of 1.10% on the rate of 4.71% in January 2013. Note the winter peaks in the years graphed; higher mortality rates are expected in winter months.

4.3 Summary Hospital-Level Mortality Indicator (SHMI) – Nationally Published Data

The most recent Summary Hospital Level Mortality Indicator (SHMI) was published in January 2014 and covers the July 2012 – June 2013 time period. The Trust’s SHMI score was 109 – the 23rd worst national SHMI score out of the 141 NHS provider organisations included in data set – this continues to be officially within the “expected range”. In the previous quarter’s SHMI release NLAG was the 15th worst national performer, with a score of 111. The SHMI includes all deaths in hospital and those deaths that occurred within thirty days of discharge. The indicator uses data that is normally around six months out of date, for example the January 2014 release covered the period July 2012 – June 2013.

NLAG’s SHMI in National Context

The following chart illustrates the Trust’s most recent SHMI score in relation to those of all Trusts nationally.



Source: Information Services / Information Centre

In and Out of Hospital Split

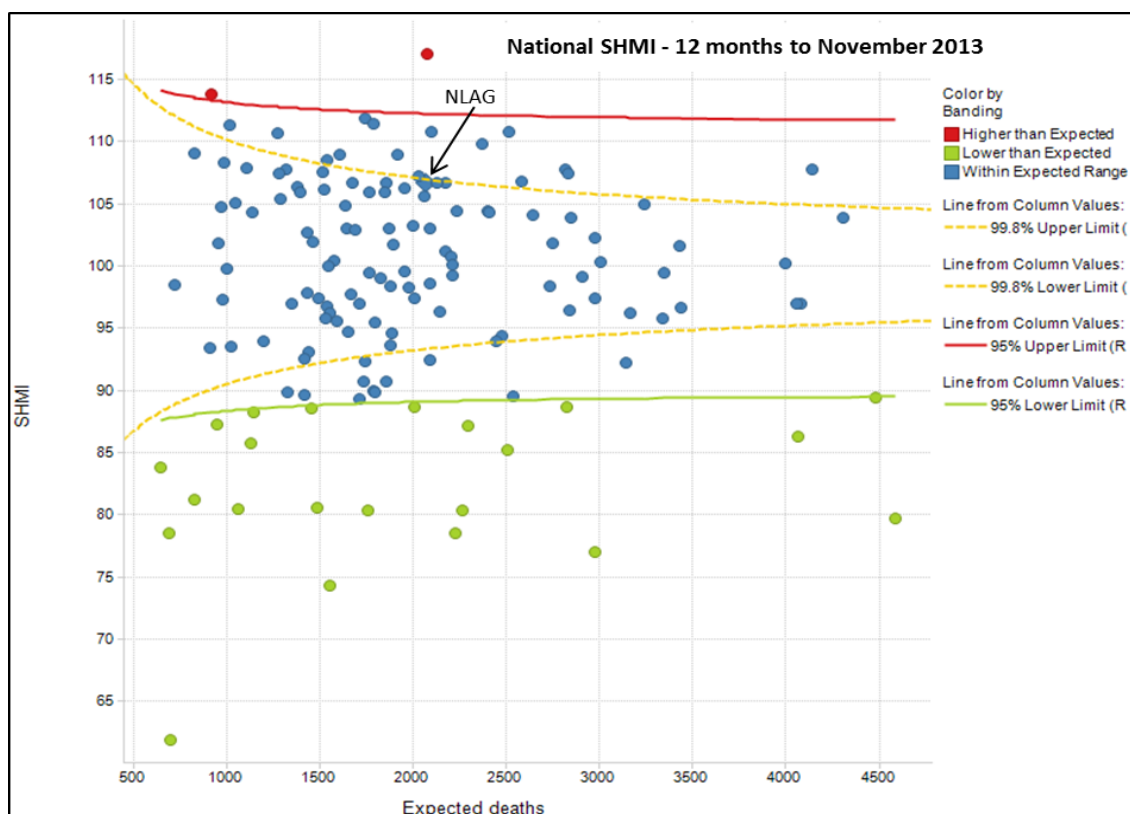
One of the SHMI contextual indicators that are published is the rate of SHMI deaths that occurred in and out of hospital. NLAG had 71.0% of SHMI deaths occurring in hospital – the national rate was 73.3%. The SHMI indicator is not solely a hospital based mortality indicator, but is influenced by wider community-based healthcare also.

4.4 Summary Hospital-Level Mortality Indicator (SHMI) – H.E.D. Provisional Data

Following the acquisition of the University of Birmingham Hospitals' Healthcare Evaluation Data (HED) reporting product, we can now report on more up to date SHMI data. You will note that the January 2014 nationally published SHMI contained data up to June 2013; the HED data currently shows data to the end of November 2013. Data in this analysis should be treated as provisional. From reconciliation work, we know that this data source reflects previous SHMI publications.

NLAG's Provisional SHMI in National Context

Using the provisional data for the twelve months to November 2013, the Trust is the 28th worst performer nationally out of the 141 NHS provider organisations included within the mortality data set, with a score of 107. The Trust continues to be in the "within expected range" banding. The following funnel plot graphically represents this.



Source: HED

Provisional SHMI by site for the twelve months to November 2013

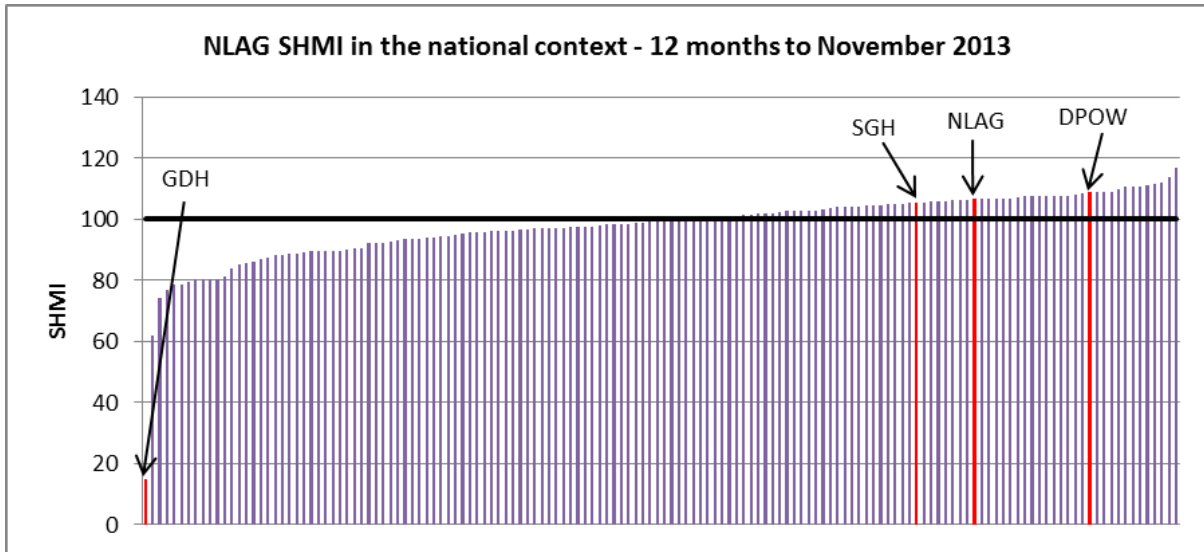
The following table shows the provisional SHMI for the latest twelve months split by hospital site.

Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Grimsby	29416	1132	1040	92	109	102.6	115.4
Scunthorpe	26781	1071	1014	57	106	99.4	112.1
Goole	932	2	13	-11	15	1.7	53.8
Grand Total	57129	2205	2068	137	107	102.2	111.2

Source: Information Services / HED

You can see that Grimsby has a higher SHMI score (109) than Scunthorpe (106) and Goole (15).

The following graph plots the national provisional SHMI scores for all Trusts in order and highlights our Trust's performance. The scores of Grimsby, Scunthorpe and Goole have been added for indicative purposes only.

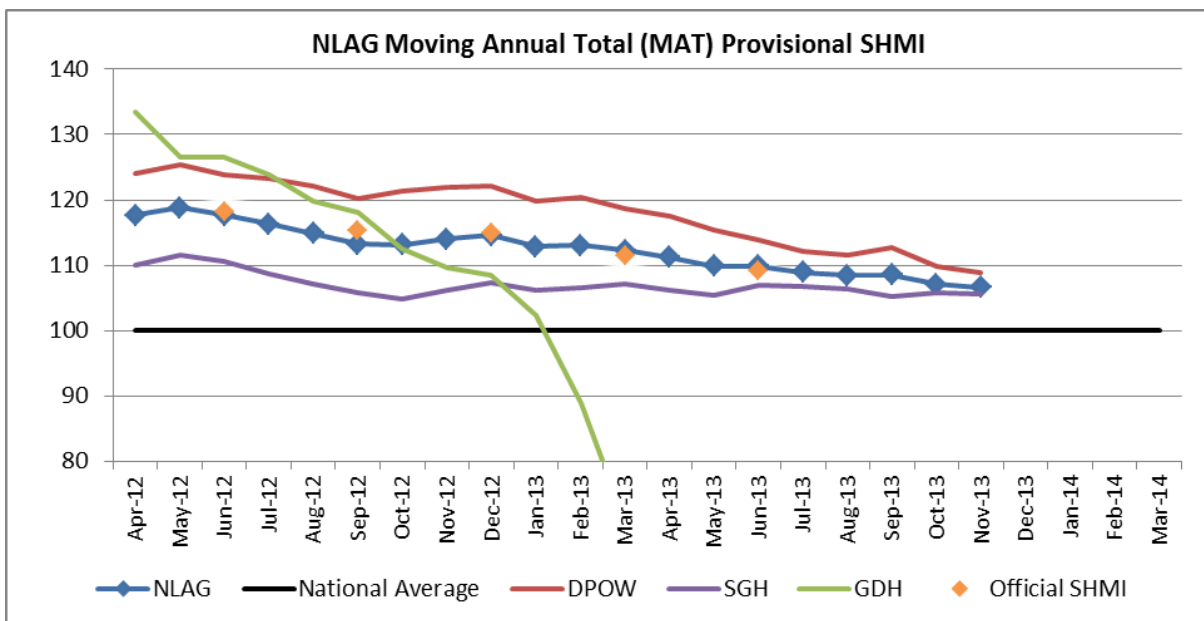


Source: Information Services

You can see that both larger sites' SHMI scores are above the national average of 100. Goole performs better with a score of 15.

Trustwide Provisional SHMI – Trending to November 2013

The following graph shows the moving annual total (MAT) for our SHMI score.

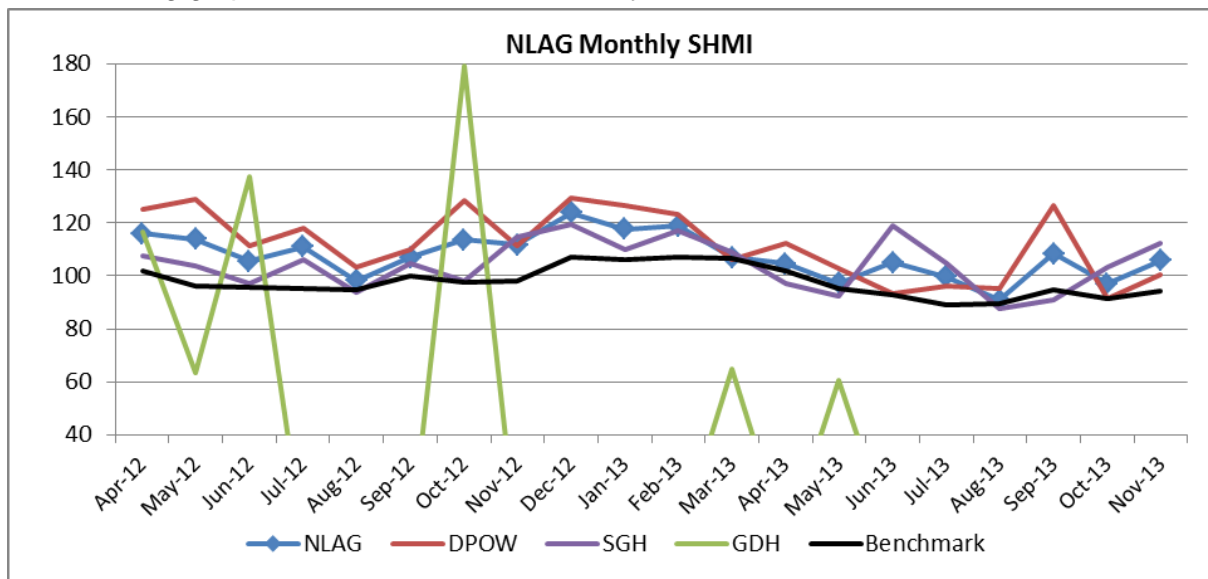


Source: Information Services

You can see that the Trust, and the Grimsby and Scunthorpe provisional SHMI scores have consistently been higher than the 'national average' score of 100. Goole's SHMI has dropped off dramatically – this is in part due to the removal of emergency admissions from summer 2012. The majority of provisional SHMI scores (blue line on graph) match the quarterly official SHMI scores (orange points). Where there is a slight difference this can be explained by two factors. Firstly, the Trust resubmitted a more complete and accurate set of data to the Information Centre in early 2013 that would have amended historic official SHMI scores to those of the provisional scores should the Information Centre have republished their SHMI scores using the resubmitted data. Secondly, the statistical modelling data is more up to date on the provisional SHMI than it is for some of the more historic official SHMI

statistics. This can have the effect of minimally changing the more historic provisional SHMI scores.

The following graph shows the individual monthly SHMI scores for the Trust.



Source: Information Services

The prevailing trend for the Trust (and the Grimsby and Scunthorpe hospitals) is to perform higher (worse) than the national benchmark. Trustwide, there was primarily a downward trend between April 2012 and August 2012. The SHMI trend then increased to 124 in December 2012, followed by a decreasing trend to a score of 91 in August 2013. There was an increase in September 2013 to a score of 108 followed by a decrease to 97 in October 2013. In the most recent month the score has increased to 106. You will note that Goole's SHMI has dropped off dramatically – this is in part due to the removal of emergency admissions from summer 2012. As the SHMI is not standardised for the month(s) of the year the patients were in hospital, it is known that there will be slightly higher SHMI monthly scores in the winter months.

Diagnosis Reporting for provisional SHMI: High Level Diagnosis Groups

The Trust's provisional SHMI split by high level diagnosis groups – sorted by variation from expected deaths – Twelve months to November 2013:

The following table splits the Trust's provisional SHMI by high level diagnosis groups. These groups have been derived by combining the official SHMI diagnoses into a more manageable number of high level groupings. This process was undertaken with clinical input. The benefit of this work is that it allows a full overview of the SHMI indicator at a diagnosis level, without breaking it down into the numerous SHMI diagnoses. The diagnosis level data reflected in this table has been shared to inform the specific groups that are looking into mortality, clinical care, use of pathways etc.

You will note that for some diagnosis groups we are dealing with small numbers of deaths and a slight shift in these numbers can cause the SHMI to fluctuate.

Diagnosis Group/Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Infection	4580	288	226	62	127	113.0	142.9
Grimsby	2188	159	128	31	124	105.5	144.9
Scunthorpe	2365	129	97	32	132	110.5	157.3
Goole	27	0	1	-1	0	-	558.3
Respiratory	6418	616	577	39	107	98.5	115.5
Grimsby	2939	306	288	18	106	94.6	118.8
Scunthorpe	3470	309	287	22	108	95.9	120.2
Goole	9	1	2	-1	62	0.8	346.1
Renal	908	152	130	22	117	99.4	137.5
Grimsby	391	65	57	8	114	87.6	144.7
Scunthorpe	511	87	72	15	122	97.4	150.0
Goole	6	0	1	-1	0	-	463.2
Gastroenterology	6993	262	241	21	109	96.0	122.7
Grimsby	3434	149	128	21	116	98.5	136.8
Scunthorpe	3502	113	112	1	101	83.1	121.2
Goole	57	0	1	-1	0	-	389.6
Stroke	1311	143	129	14	111	93.6	130.8
Grimsby	687	88	69	19	128	102.9	158.1
Scunthorpe	613	55	58	-3	95	71.4	123.4
Goole	11	0	2	-2	0	-	165.9
Trauma and Orthopaedics	4649	150	136	14	110	93.3	129.3
Grimsby	2430	82	70	12	117	93.3	145.6
Scunthorpe	2092	68	65	3	105	81.6	133.2
Goole	127	0	2	-2	0	-	241.1
DVT/PE	262	14	6	8	219	119.4	366.8
Grimsby	180	10	5	5	221	105.8	406.6
Scunthorpe	80	4	2	2	213	57.3	544.9
Goole	2	0	0	0	0	-	317861.
Urinary Tract	1311	15	11	4	140	78.4	231.2
Grimsby	597	4	4	0	90	24.3	231.5
Scunthorpe	659	11	6	5	178	88.8	318.6
Goole	55	0	0	0	0	-	-
Haematology	188	10	6	4	166	79.4	304.9
Grimsby	73	5	2	3	223	71.7	519.3
Scunthorpe	115	5	4	1	132	42.6	308.2
Diabetes and	680	25	22	3	115	74.2	169.2

Diagnosis Group/Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Endocrine							
Grimsby	286	9	9	0	100	45.5	189.1
Scunthorpe	391	16	13	3	127	72.6	206.3
Goole	3	0	0	0	0	-	2031.0
Neurological	963	23	21	2	108	68.6	162.5
Grimsby	462	12	11	1	113	58.4	197.7
Scunthorpe	489	11	10	1	108	54.1	194.1
Goole	12	0	0	0	0	-	-
Vascular	411	32	31	1	102	70.0	144.5
Grimsby	225	21	18	3	115	71.3	176.3
Scunthorpe	182	11	12	-1	91	45.6	163.5
Goole	4	0	1	-1	0	-	364.3
Rheumatoid	2790	21	21	0	101	62.3	153.9
Grimsby	1250	10	8	2	122	58.3	223.9
Scunthorpe	1152	11	12	-1	91	45.4	162.8
Goole	388	0	1	-1	0	-	664.8
Gynaecology	13960	3	4	-1	86	17.2	250.4
Grimsby	8531	1	2	-1	60	0.8	332.4
Scunthorpe	5334	2	2	0	112	12.5	403.2
Goole	95	0	0	0	0	-	-
Psychological	525	20	22	-2	92	56.1	141.9
Grimsby	242	5	7	-2	71	23.0	166.3
Scunthorpe	282	15	15	0	102	57.3	169.0
Goole	1	0	0	0	0	-	-
Miscellaneous*	1791	13	15	-2	88	46.6	149.9
Grimsby	964	7	7	0	94	37.5	193.0
Scunthorpe	791	6	7	-1	83	30.3	180.5
Goole	36	0	0	0	0	-	-
Digestive	364	2	5	-3	38	4.3	137.2
Grimsby	153	1	2	-1	43	0.6	240.8
Scunthorpe	210	1	3	-2	34	0.4	188.6
Goole	1	0	0	0	0	-	-
Neonatal	1415	7	11	-4	63	25.1	129.2
Grimsby	718	3	6	-3	50	10.1	147.4
Scunthorpe	697	4	5	-1	77	20.6	196.2
Cardiology	4861	212	220	-8	96	83.9	110.3
Grimsby	2238	96	106	-10	91	73.6	111.0
Scunthorpe	2618	116	114	2	102	84.2	122.2
Goole	5	0	0	0	0	-	-
Cancer	2749	197	234	-37	84	72.8	96.8
Grimsby	1428	99	113	-14	88	71.4	106.9
Scunthorpe	1228	97	119	-22	82	66.2	99.6
Goole	93	1	3	-2	38	0.5	213.3
Grand Total	57129	2205	2068	137	107	102.2	111.2

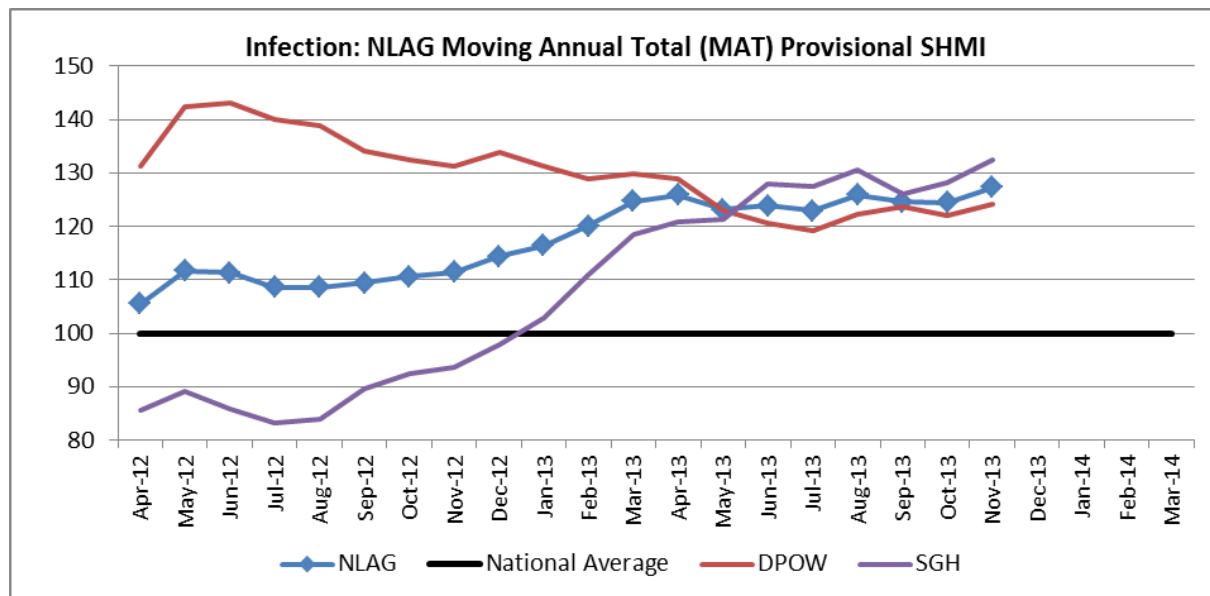
* includes patients admitted with a primary diagnosis that was non-specific, malaise, non-specific poisoning etc.

Source: Information Services/HED

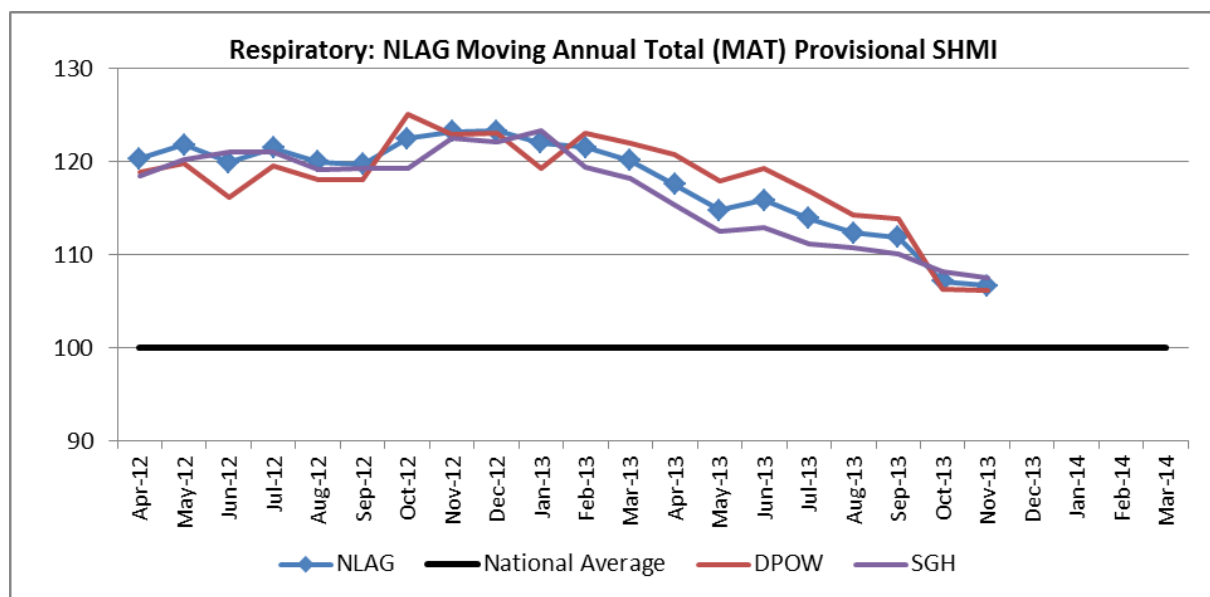
Diagnosis Reporting for provisional SHMI: Trend Graphs for Top Five High Level Diagnosis Groups

The Trust's provisional SHMI for the top five high level diagnosis groups – trend graphs – Twelve months to November 2013

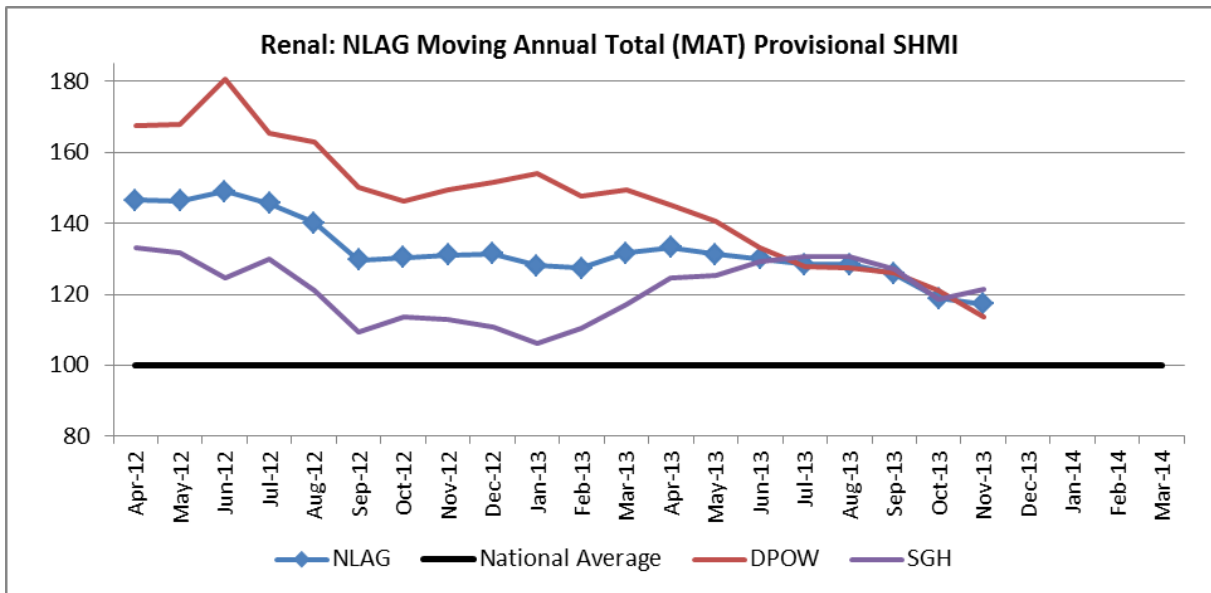
The Goole SHMI MAT trends for the top five high level diagnosis groups are not represented graphically as we are dealing with very low numbers of deaths and a slight shift in these numbers causes the SHMI to fluctuate.



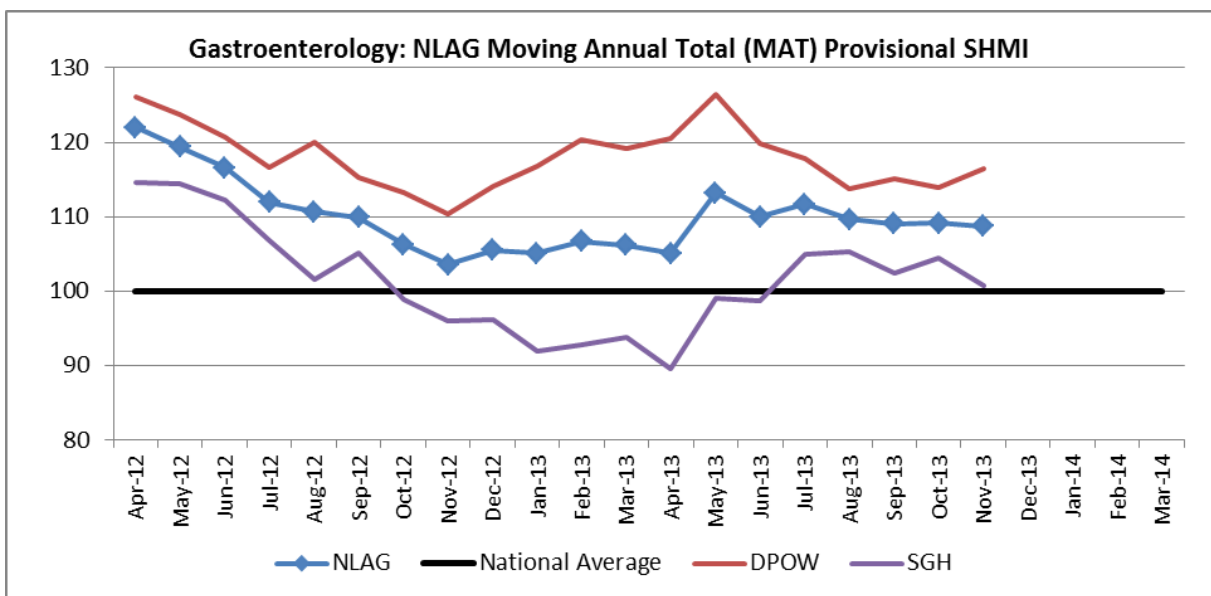
Source: Information Services/HED



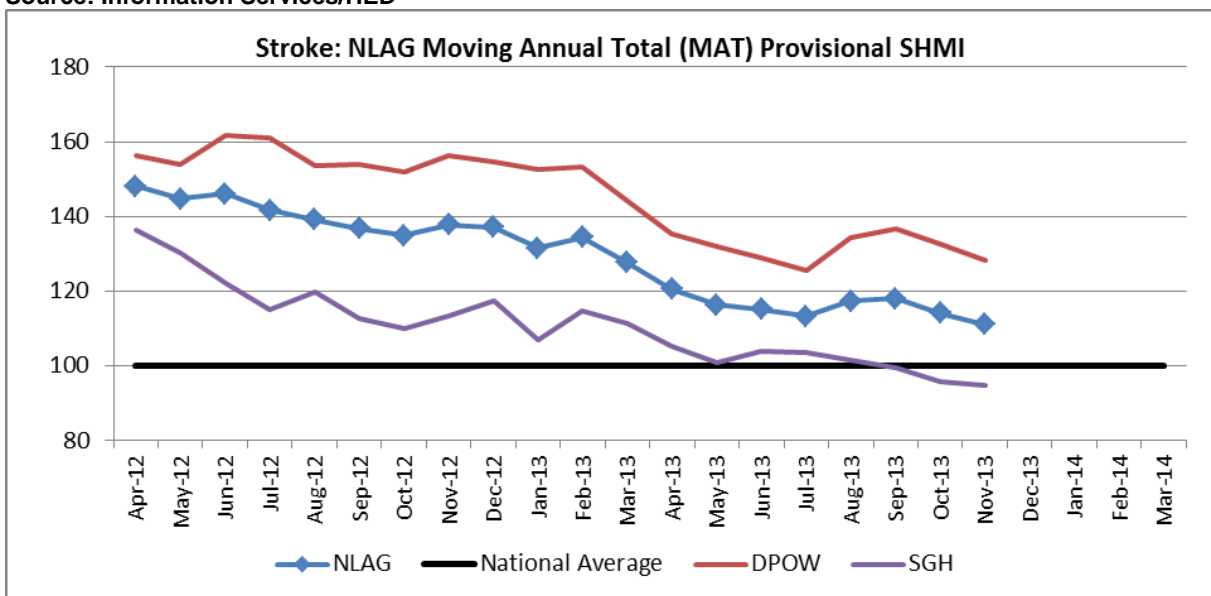
Source: Information Services/HED



Source: Information Services/HED



Source: Information Services/HED



Source: Information Services/HED

4.5 Weekday & Weekend SHMI

Provisional SHMI by admission period – 12 months to November 2013

The following table shows the SHMI by weekday v weekend admissions for the latest twelve months.

Admission Period/Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI Score	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Weekday	44952	1638	1564	74	105	99.7	110.0
Grimsby	23049	817	777	40	105	98.0	112.6
Scunthorpe	21028	819	775	44	106	98.6	113.2
Goole	875	2	12	-10	17	1.9	59.9
Weekend	12177	567	504	63	113	103.4	122.2
Grimsby	6367	315	263	52	120	106.9	133.8
Scunthorpe	5753	252	240	12	105	92.6	119.0
Goole	57	0	1	-1	0	-	270.7
Grand Total	57129	2205	2068	137	107	102.2	111.2

Source: Information Services/HED

Comment: You can see there is a higher SHMI for weekend admissions – a difference of 8 points between the two periods at trust level. Grimsby has a 15 point difference between weekday (105) and weekend (120) SHMI scores. Scunthorpe's weekend (105) SHMI score is one point lower than the weekday (106) SHMI. The very small numbers of deaths at Goole causes the SHMI scores to fluctuate. Note that because the SHMI model is not standardised by weekday v weekend admissions, the national average SHMI is not 100 when split by admission period. The national average SHMI for the weekday admission period is 97 and for the weekend admission period is 104; a difference of 7 points. Both of the larger hospitals sites' SHMI scores are higher than the weekday and the weekend national average SHMI scores.

4.6 Provisional SHMI: Elective and Non Elective split

Provisional SHMI by admission type – 12 months to November 2013

The following table shows the SHMI by admission type for the latest twelve months.

Admission Type/Site	Patient Spells	Deaths	Expected Deaths	Variation from Expected	SHMI Score	SHMI Lower CI 95% error limit	SHMI Upper CI 95% error limit
Elective	8622	68	69	-1	99	76.9	125.5
Grimsby	4584	30	30	0	99	67.0	141.7
Scunthorpe	3246	36	35	1	103	72.1	142.5
Goole	792	2	3	-1	57	6.4	206.9
Non-elective	48507	2137	1999	138	107	102.4	111.5
Grimsby	24832	1102	1010	92	109	102.8	115.8
Scunthorpe	23535	1035	979	56	106	99.4	112.3
Goole	140	0	10	-10	0	-	37.0
Grand Total	57129	2205	2068	137	107	102.2	111.2

Source: Information Services/HED

Comment: You can see that at trust level there is a higher SHMI for non-elective admissions. Note the number of elective deaths is small compared to the non elective cohort and a slight change in numbers can affect the elective SHMI score. Full collection of co-

morbidities should be stressed to elective services, such as surgery, to ensure the Trust has an accurate number of expected deaths.

A section on the in and out of hospital split follows.

4.7 Provisional SHMI: In and Out of Hospital Split

Provisional SHMI: Deaths split by In/Out of Hospital – 12 months to November 2013

The following table shows the split of SHMI deaths by in and out of hospital for the latest twelve months.

Site	Deaths	In Hospital Deaths	Out of Hospital Deaths	% In Hospital
Grimsby	1132	805	327	71.1%
Scunthorpe	1071	739	332	69.0%
Goole	2	1	1	50.0%
Grand Total	2205	1545	660	70.1%

Source: Information Services/HED

Comment: You can see that around 70% of all the SHMI deaths for the year to November 2013 occurred in hospital. The remainder occurred within 30 days of discharge from the Trust. The number of deaths at the Goole site is small and this can, in turn, cause the in hospital percentage to fluctuate. The national average for in hospital deaths was 73.3% for the year July 2012 – June 2013.

Provisional SHMI: Score split by In/Out of Hospital SHMI – 12 months to November 2013

The following table shows the full SHMI score for the latest twelve months split into in and out of hospital components.

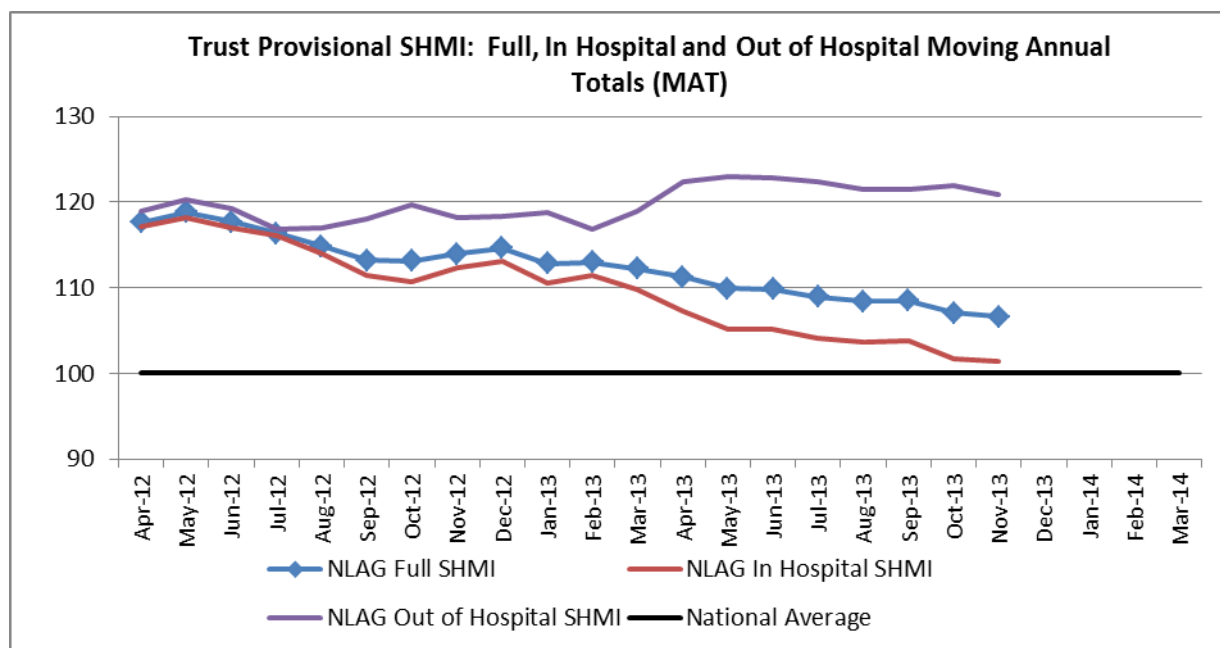
Site	Full			In Hospital			Out of Hospital		
	SHMI	Lower CI 95% error limit	Upper CI 95% error limit	SHMI	Lower CI 95% error limit	Upper CI 95% error limit	SHMI	Lower CI 95% error limit	Upper CI 95% error limit
Grimsby	109	102.6	115.4	104	96.9	111.4	123	109.8	136.8
Scunthorpe	106	99.4	112.1	100	92.9	107.5	120	107.8	134.1
Goole	15	1.7	53.8	10	0.1	57.1	28	0.4	153.9
Grand Total	107	102.2	111.2	101	96.5	106.6	121	111.9	130.5

Source: Information Services/HED

Comment: The full SHMI is a health community measure. Practice in our hospitals is not the only factor influencing the SHMI score. The split of the SHMI into the in and out of hospital components gives us an indication of the SHMI performance for these two elements of the health community. The methodology used for the split of the full SHMI is the same as the one used in the Boston Consulting Group SHMI analysis undertaken on behalf of our commissioners in early 2013. You can see that there is a higher out of hospital SHMI for the Trust and the two larger sites – a difference of 20 points between the two elements of SHMI at trust level. The number of deaths at the Goole site is small and this can, in turn, cause the SHMI scores to fluctuate.

Provisional SHMI: In/Out of Hospital SHMI Score Trending Graph

The following graph shows the moving annual total scores for the full SHMI, the in hospital SHMI and the out of hospital SHMI for the Trust.



Source: Information Services/HED

Comment: The reduction in the in hospital element of the SHMI mirrors the reduction of the full SHMI itself. Note the wide gap on the graph between the in and out of hospital SHMI.

Provisional SHMI: Top 5 Diagnoses for In/Out of Hospital SHMI – 12 months to November 2013

The following table shows the difference in SHMI scores and ranking between the top 5 diagnoses (sorted by variation from expected number of deaths) for in and out of hospital deaths.

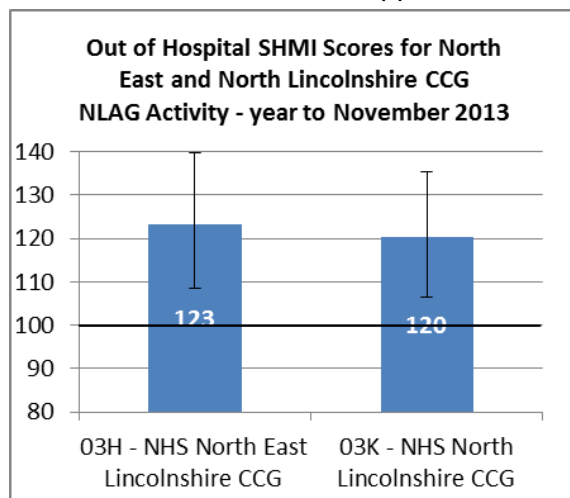
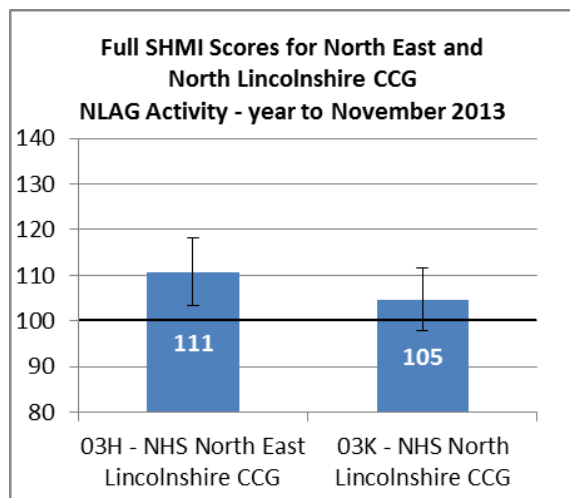
Diagnosis Group	In Hospital			Out of Hospital			Difference in SHMI	Rank: In v Out
	SHMI	Lower CI 95% error limit	Upper CI 95% error limit	SHMI	Lower CI 95% error limit	Upper CI 95% error limit		
Infection	122	106.1	139.9	142	112.8	177.1	-20	1 v 1
Respiratory	104	94.8	113.8	116	98.2	137.0	-12	2 v 2
Renal	112	91.6	136.1	129	95.6	170.9	-17	3 v 5
Stroke	106	87.5	127.2	138	91.6	199.3	-32	4 v 6
Rheumatoid	126	70.5	207.8	67	24.5	145.8	59	5 v 20
Gastroenterology	101	86.7	116.9	130	103.5	160.7	-29	8 v 3
Trauma and Orthopaedics	95	76.2	117.3	141	108.1	180.0	-46	17 v 4

Source: Information Services/HED

Comment: Infection and respiratory diagnosis groups are top ranking in and out of hospital.

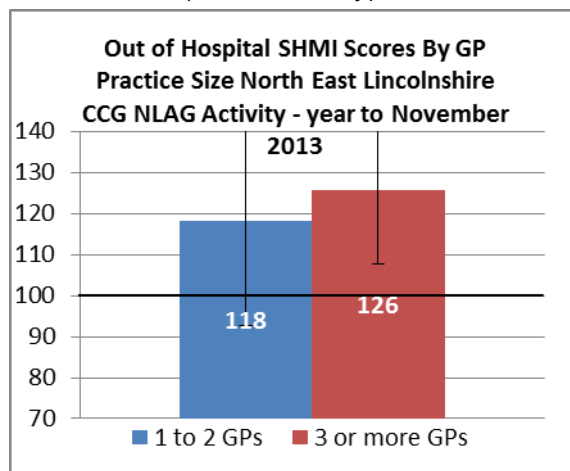
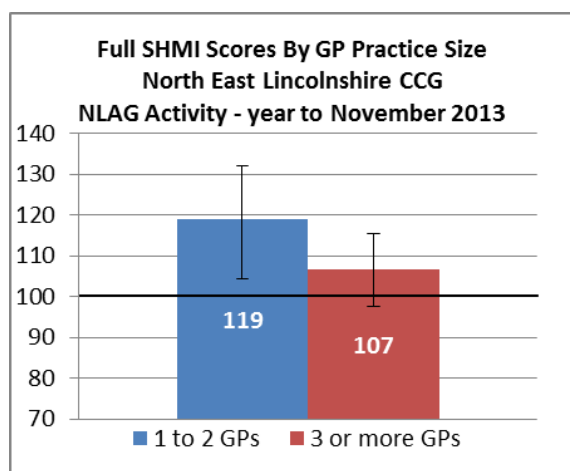
4.8 CCG Level SHMI for NLAG Activity

The following two graphs show the full and out of hospital SHMI scores for North East Lincolnshire CCG and North Lincolnshire CCG (NLAG activity) for the year to November 2013. The graphs on this page include the SHMI 95% confidence interval error bars, which show with 95% confidence that the SHMI scores fall between the lower and upper limits.

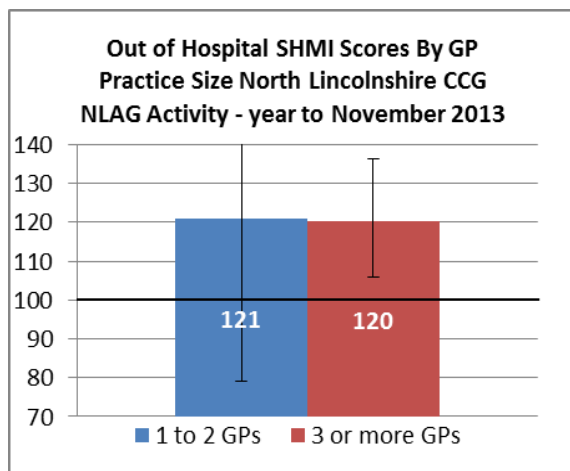
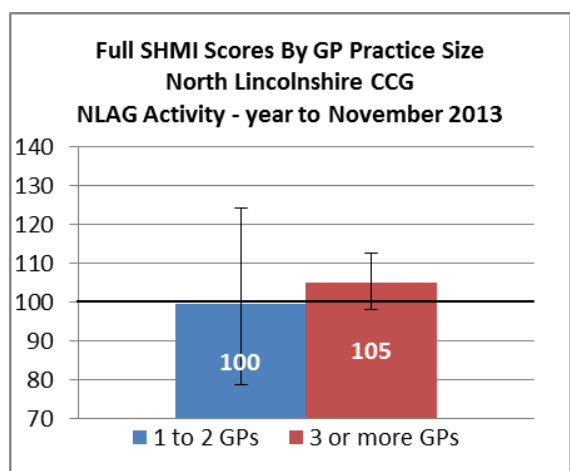


Source: Information Services/HED

The following graphs show the full and out of hospital SHMI scores split by practice size for North East Lincolnshire CCG and for North Lincolnshire CCG (NLAG activity).



Source: Information Services/HED



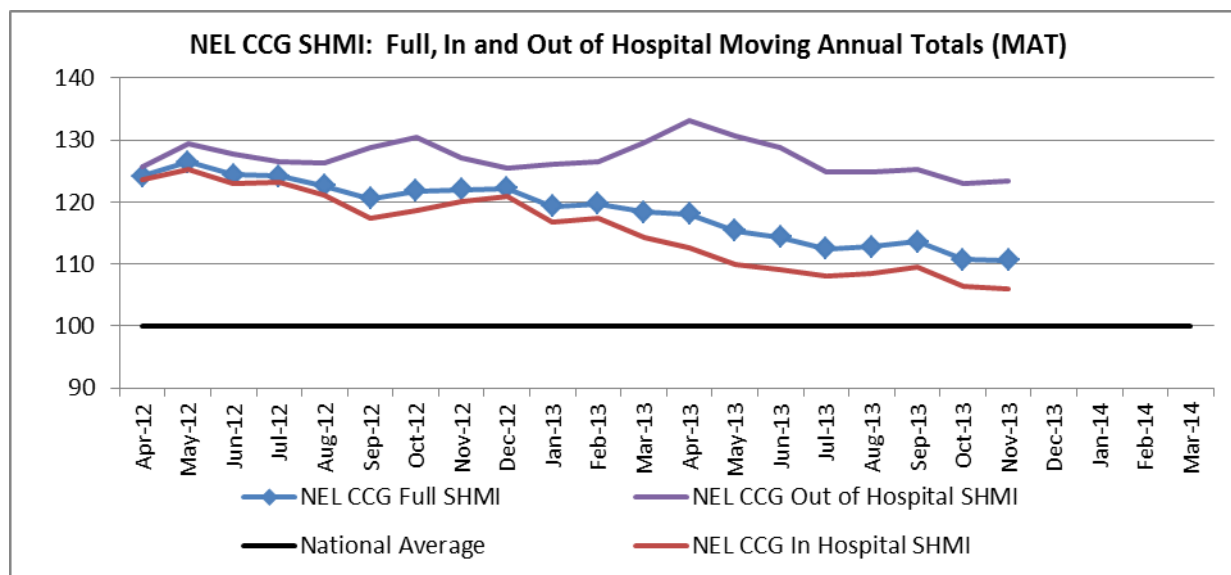
Source: Information Services/HED

Comment: For NEL CCG, the smaller practices had a higher full SHMI than the larger practices, with the opposite shown for out of hospital SHMI. For NL CCG, the smaller

practices had a lower full SHMI than the larger practices, with the opposite shown for out of hospital SHMI.

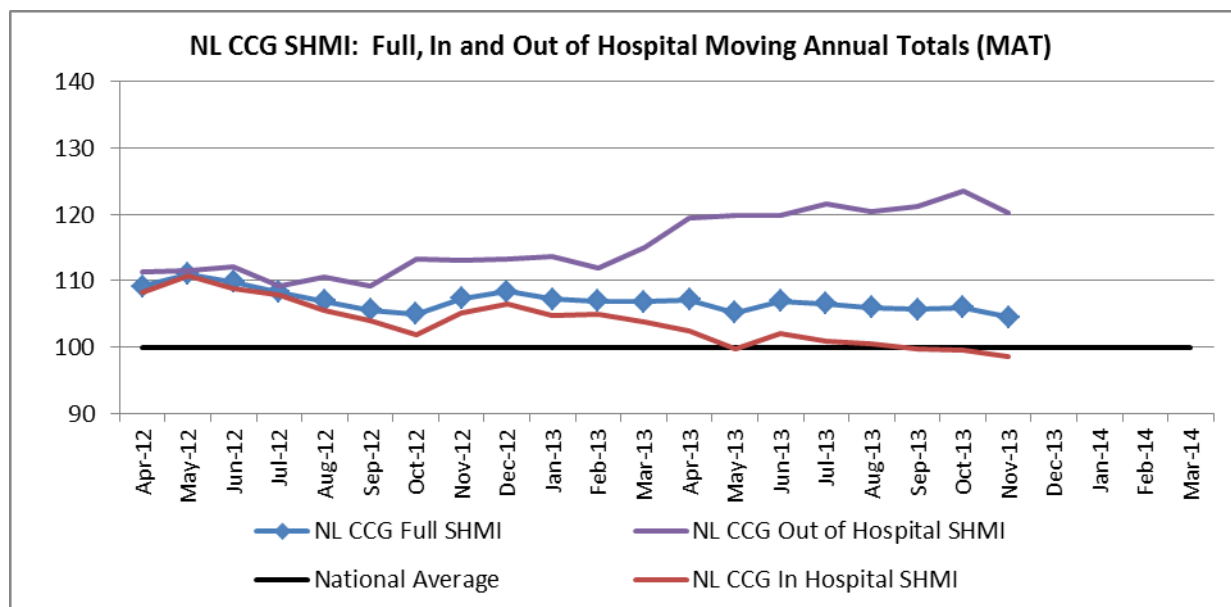
CCG SHMI: Full, In and Out of Hospital Trending Graphs

The following two graphs show the moving annual total scores for the full, in and out of hospital SHMI for North East Lincolnshire CCG and North Lincolnshire CCG (NL CCG activity) respectively.



Source: Information Services/HED

Comment: The full SHMI for North East Lincolnshire CCG has reduced to a score of 111 for the year to November 2013 from 122 for the year to November 2012. The gap between the full SHMI and the out of hospital SHMI has widened during the periods shown.

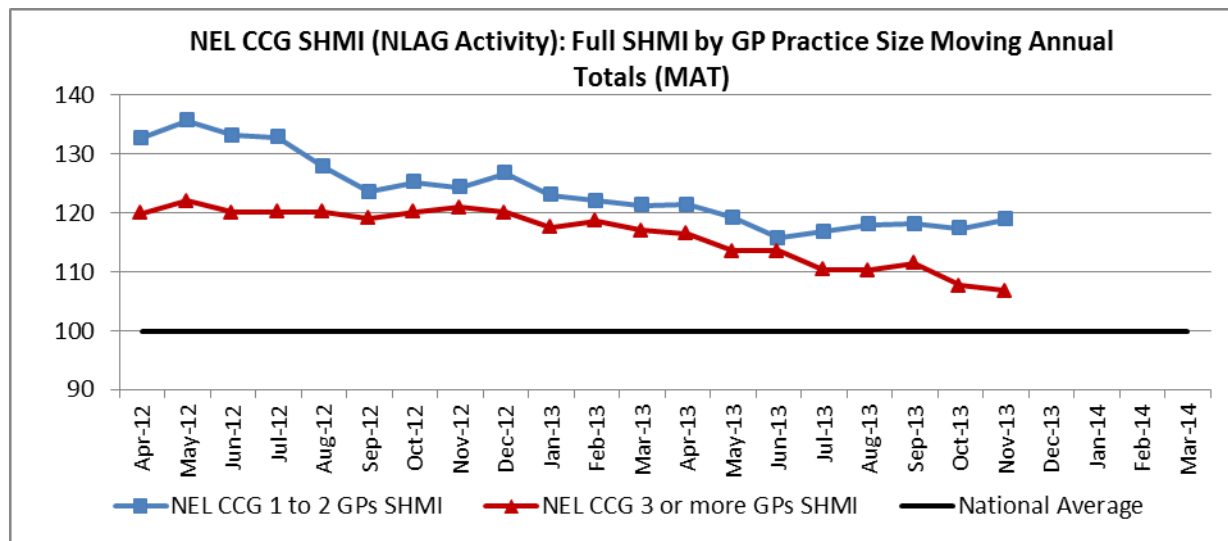


Source: Information Services/HED

Comment: The full SHMI for North Lincolnshire CCG has decreased to a score of 105 for the year to November 2013 from 107 for the year to November 2012. The out of hospital SHMI decreased to a score of 120 for the year to November 2013. Note the wide gap between the full SHMI and the out of hospital SHMI.

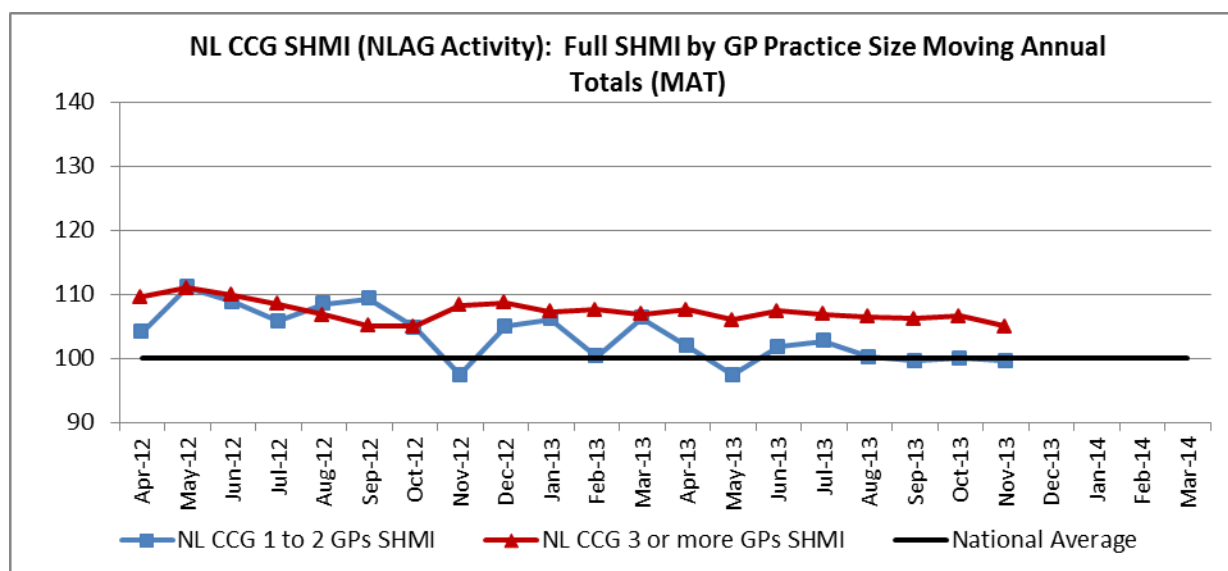
CCG SHMI: Full SHMI by GP Practice Size Trending Graphs

The following two graphs show the moving annual total scores for the full SHMI by GP practice size for North East Lincolnshire CCG and North Lincolnshire CCG (NLAG activity) respectively.



Source: Information Services/HED

Comment: The smaller practices in North East Lincolnshire have a higher SHMI than the larger practices. From the year to May 2012, the SHMI trend for the smaller practices had been reducing but from June 2013 the trend has increased. The SHMI trend for the larger practices shows a reduction during the periods shown.



Source: Information Services/HED

Comment: The SHMI scores for smaller practices in North Lincolnshire have reduced and have been close to national average since April 2013. The SHMI trend for the larger practices shows a slight reduction during the periods shown.

GP Practice Information: North East Lincolnshire CCG SHMI (NLAG Activity)

Full and Out of Hospital SHMI – 12 months to November 2013

The following table shows the total number of deaths, number of out of hospital deaths, full SHMI scores, and out of hospital SHMI scores, sorted by the total number of deaths, for GP Practices in North East Lincolnshire CCG (NLAG activity).

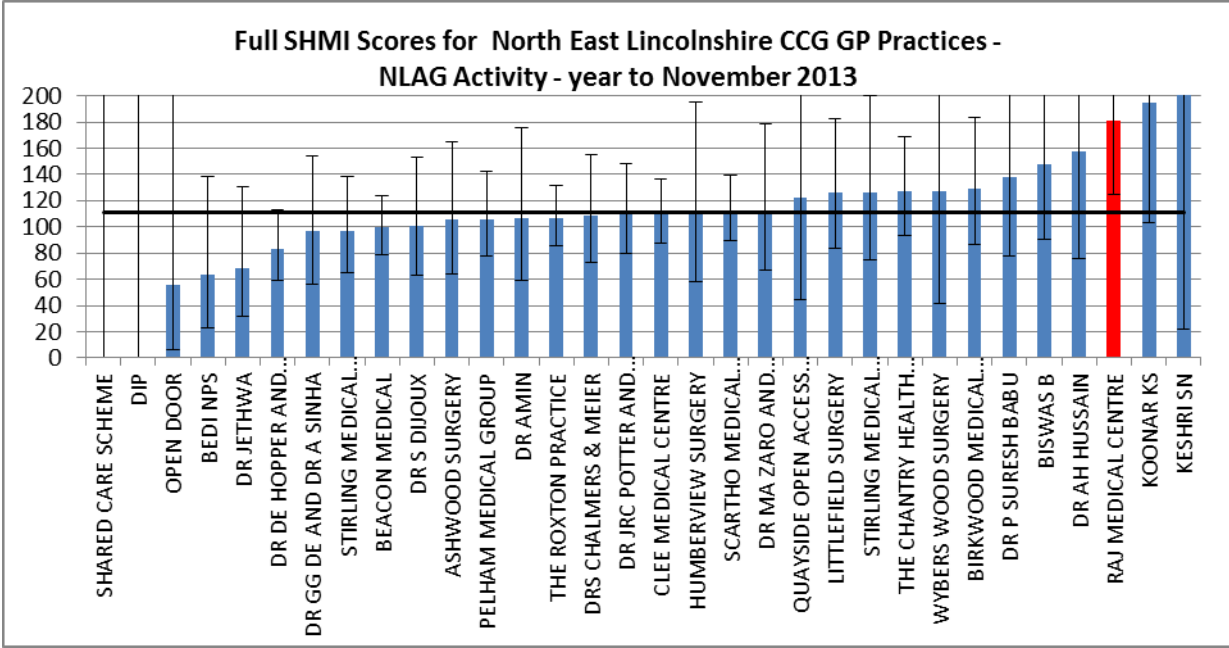
You will note that for some GP practices we are dealing with small numbers of deaths and a slight shift in these numbers can cause the SHMI scores to fluctuate.

GP Practice	Patient Spells	Total Deaths	Out of Hospital Deaths	Full SHMI	Out of Hospital SHMI
03H - NHS North East Lincolnshire CCG	21652	867	248	111	123
THE ROXTON PRACTICE	1998	88	29	107	141
SCARTHO MEDICAL CENTRE	1488	84	24	113	122
CLEE MEDICAL CENTRE	1912	83	28	110	144
BEACON MEDICAL	1613	78	27	99	129
THE CHANTRY HEALTH GROUP	847	48	16	127	177
PELHAM MEDICAL GROUP	1173	45	13	106	130
DR JRC POTTER AND PARTNERS	1308	43	9	110	92
DR DE HOPPER AND PARTNERS	1630	40	10	83	76
RAJ MEDICAL CENTRE	782	33	4	181	85
STIRLING MEDICAL CENTRE (S KUMAR)	668	30	10	97	123
BIRKWOOD MEDICAL CENTRE	921	30	7	129	112
DRS CHALMERS & MEIER	583	29	9	108	133
LITTLEFIELD SURGERY	606	28	7	126	117
DR S DIJOUX	363	22	4	101	75
BISWAS B	343	20	7	148	209
ASHWOOD SURGERY	692	19	4	106	84
STIRLING MEDICAL CENTRE (MATHEWS)	578	18	5	127	141
DR MA ZARO AND PARTNER	360	18	6	113	152
DR GG DE AND DR A SINHA	567	17	5	97	108
DR P SURESH BABU	356	15	3	139	118
DR AMIN	382	15	6	106	182
KOONAR KS	188	13	2	195	126
HUMBERVIEW SURGERY	340	12	2	112	78
DR AH HUSSAIN	228	10	4	158	215
DR JETHWA	382	9	4	69	120
QUAYSIDE OPEN ACCESS CENTRE	481	6	0	122	0
BEDI NPS	291	6	0	63	0
WYBERS WOOD SURGERY	244	5	3	128	290
OPEN DOOR	292	2	0	56	0
KESHRI SN	21	1	0	1662	0
SHARED CARE SCHEME	1	0	0	0	0
DIP	14	0	0	0	0

Source: Information Services/HED

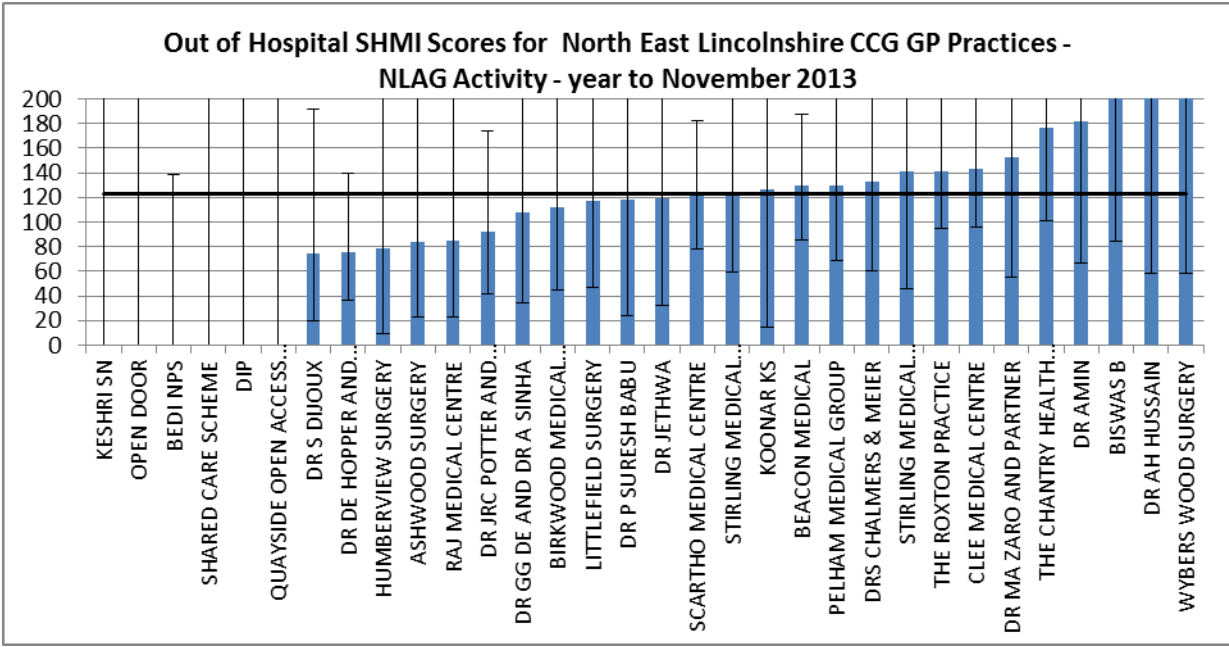
Two graphs showing the GP practice full and out of hospital SHMI scores for the CCG follow.

The following two graphs show the GP practice full and out of hospital SHMI scores for North East Lincolnshire CCG (NLAG activity) benchmarked against the CCG's full SHMI (111) and out of hospital SHMI (123) scores respectively. The graphs include the SHMI 95% confidence interval error bars, which show with 95% confidence that the SHMI scores fall between the lower and upper limits.



Source: Information Services/HED

Comment: For one North East Lincolnshire CCG GP practice (indicated by the red bar) the full SHMI lower 95% confidence limit is higher than the CCG's full SHMI score (111). There were 33 deaths for Raj Medical Centre.



Source: Information Services/HED

Comment: None of the North East Lincolnshire CCG GP practices have an out of hospital SHMI lower 95% confidence limit that is higher than the CCG's out of hospital SHMI score (123). Note that we are dealing with smaller numbers of deaths for the out of hospital SHMI scores which leads to wider confidence intervals.

GP Practice Information: North Lincolnshire CCG SHMI (NLAG Activity)

Full and Out of Hospital SHMI – 12 months to November 2013

The following table shows the total number of deaths, number of out of hospital deaths, full SHMI scores, and out of hospital SHMI scores, sorted by the total number of deaths, for GP Practices in North Lincolnshire CCG (NLAG activity).

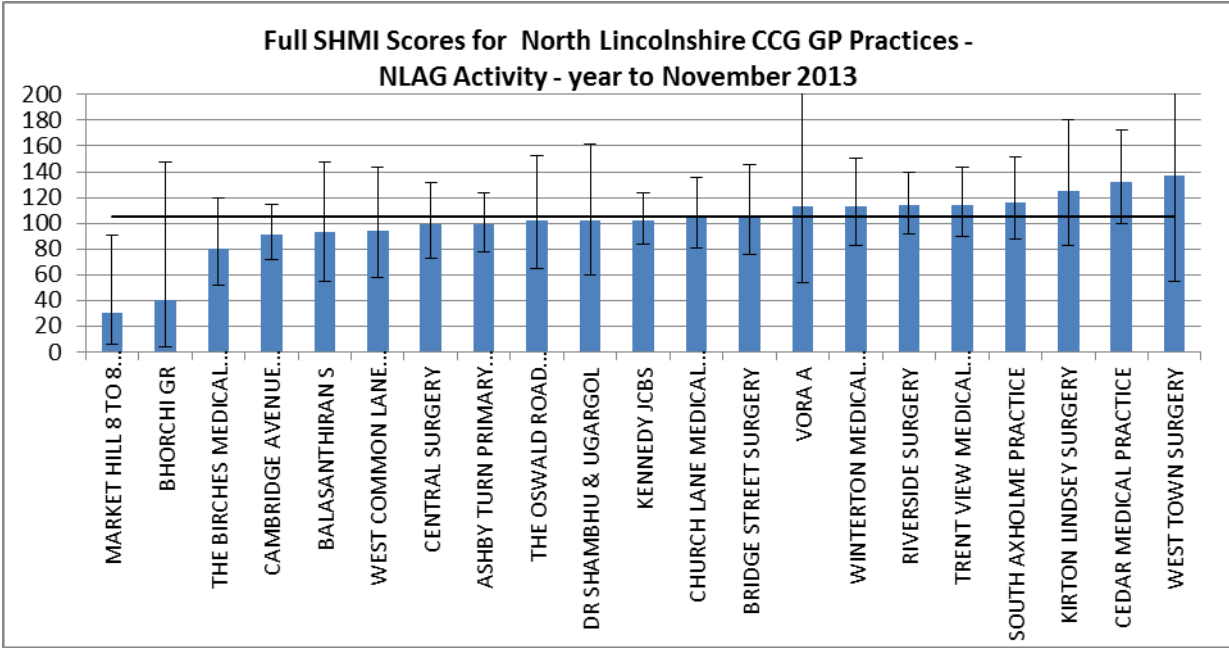
You will note that for some GP practices we are dealing with small numbers of deaths and a slight shift in these numbers can cause the SHMI scores to fluctuate.

GP Practice	Patient Spells	Total Deaths	Out of Hospital Deaths	Full SHMI	Out of Hospital SHMI
03K - NHS North Lincolnshire CCG	22932	878	274	105	120
KENNEDY JCBS	2746	105	30	102	110
RIVERSIDE SURGERY	1645	91	22	114	101
CAMBRIDGE AVENUE MEDICAL CENTRE	2236	75	24	91	110
ASHBY TURN PRIMARY CARE PARTNERS	1854	75	25	99	124
TRENT VIEW MEDICAL PRACTICE	1615	74	25	115	138
CHURCH LANE MEDICAL CENTRE	1317	60	18	105	122
SOUTH AXHOLME PRACTICE	1195	56	18	117	135
CEDAR MEDICAL PRACTICE	996	55	18	132	161
WINTERTON MEDICAL PRACTICE	1243	47	12	113	98
CENTRAL SURGERY	1456	47	15	99	117
BRIDGE STREET SURGERY	778	39	17	107	166
KIRTON LINDSEY SURGERY	587	28	13	125	209
THE BIRCHES MEDICAL PRACTICE	1275	24	5	81	67
THE OSWALD ROAD MEDICAL SURGERY	671	23	6	102	99
WEST COMMON LANE TEACHING PRACTICE	836	21	4	94	66
BALASANTHIRAN S	440	18	5	94	94
DR SHAMBHU & UGARGOL	599	18	6	102	122
VORA A	260	10	4	113	160
WEST TOWN SURGERY	186	7	3	137	207
MARKET HILL 8 TO 8 CENTRE	843	3	2	31	76
BHORCHI GR	154	2	2	41	164

Source: Information Services/HED

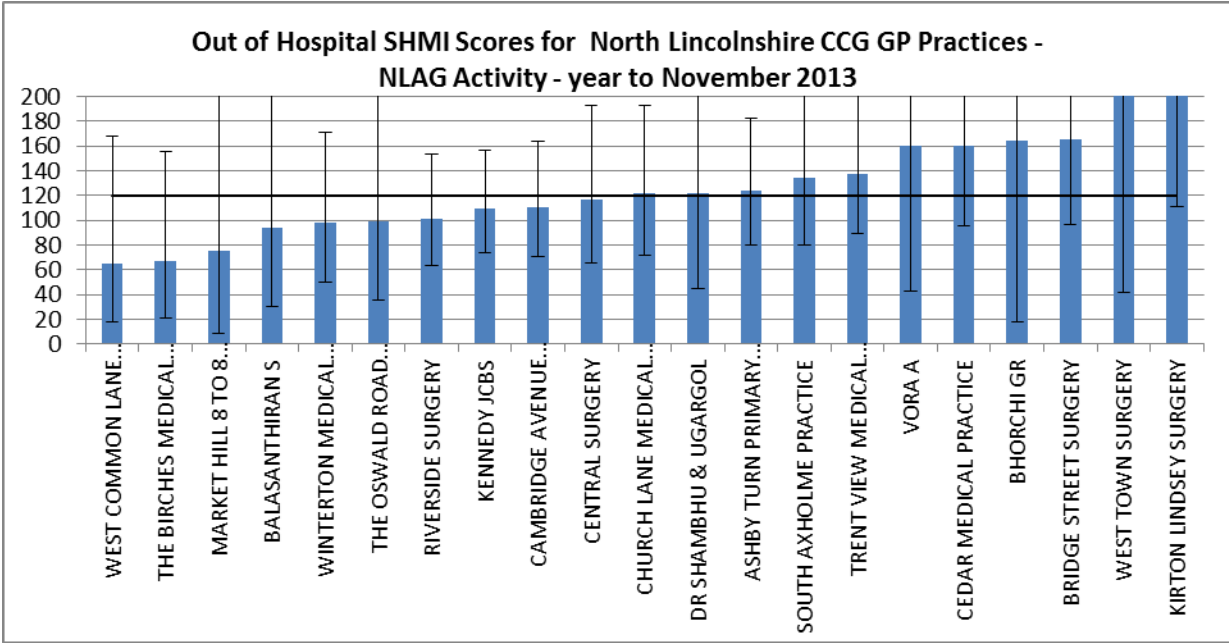
Two graphs showing the GP practice full and out of hospital SHMI scores for the CCG follow.

The following two graphs show the GP practice full and out of hospital SHMI scores for North Lincolnshire CCG (NLAG activity) benchmarked against the CCG’s full SHMI (105) and out of hospital SHMI (120) scores respectively. The graphs include the SHMI 95% confidence interval error bars, which show with 95% confidence that the SHMI scores fall between the lower and upper limits.



Source: Information Services/HED

Comment: None of the North Lincolnshire CCG GP practices have a SHMI lower 95% confidence limit that is higher than the CCG’s out of hospital SHMI score (105).



Source: Information Services/HED

Comment: None of the North Lincolnshire CCG GP practices have an out of hospital SHMI lower 95% confidence limit that is higher than the CCG’s out of hospital SHMI score (120). Note that we are dealing with smaller numbers of deaths for the out of hospital SHMI scores which leads to wider confidence intervals.

4.9 Risk Adjusted Mortality Index (RAMI)

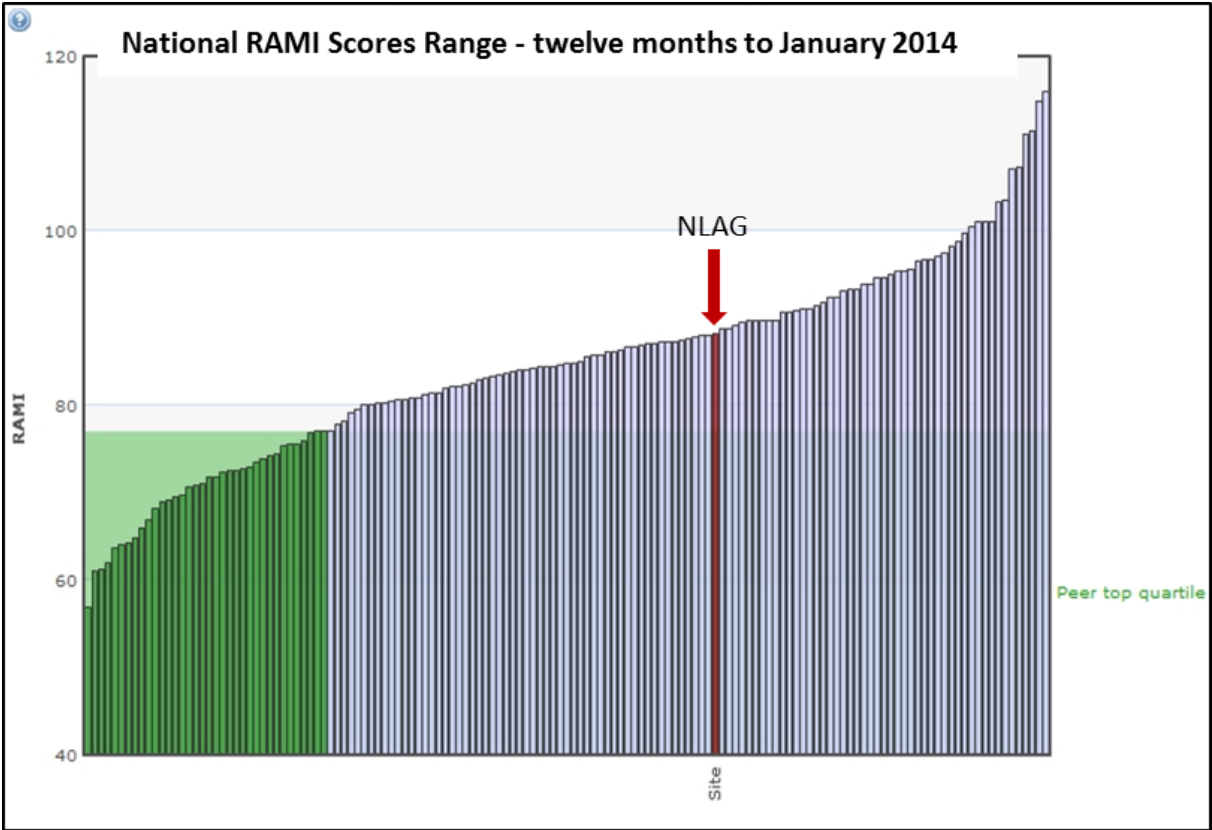
NLAG RAMI Score in National Context

The Trust now uses the SHMI as its key standardised mortality ratio (SMR), however it is prudent to monitor performance on other indicators if we have them available to us. The Trust has access to the CHKS Signpost product to monitor other areas of performance such as emergency readmission rates, outpatient did not attend (DNA) rates and new to review ratios. Signpost also gives us access to Risk Adjusted Mortality Index (RAMI).

The RAMI is a standardised mortality ratio that is casemix adjusted. It uses a different methodology from SHMI. Where possible, a RAMI score should be compared to a peer value as the older the statistical model is, a score of 100 is not necessarily the 'norm'. CHKS update, or rebase, the model once a year.

The graph below shows the Trust's most recent 12 months' RAMI score in comparison with other national Trusts.

NLAG's RAMI score in comparison with other national Trusts – twelve months to January 2014



Source: CHKS

Comment: NLAG has a RAMI score of 88. The national average RAMI score is 85 and the local peer of similar Trusts is 91.

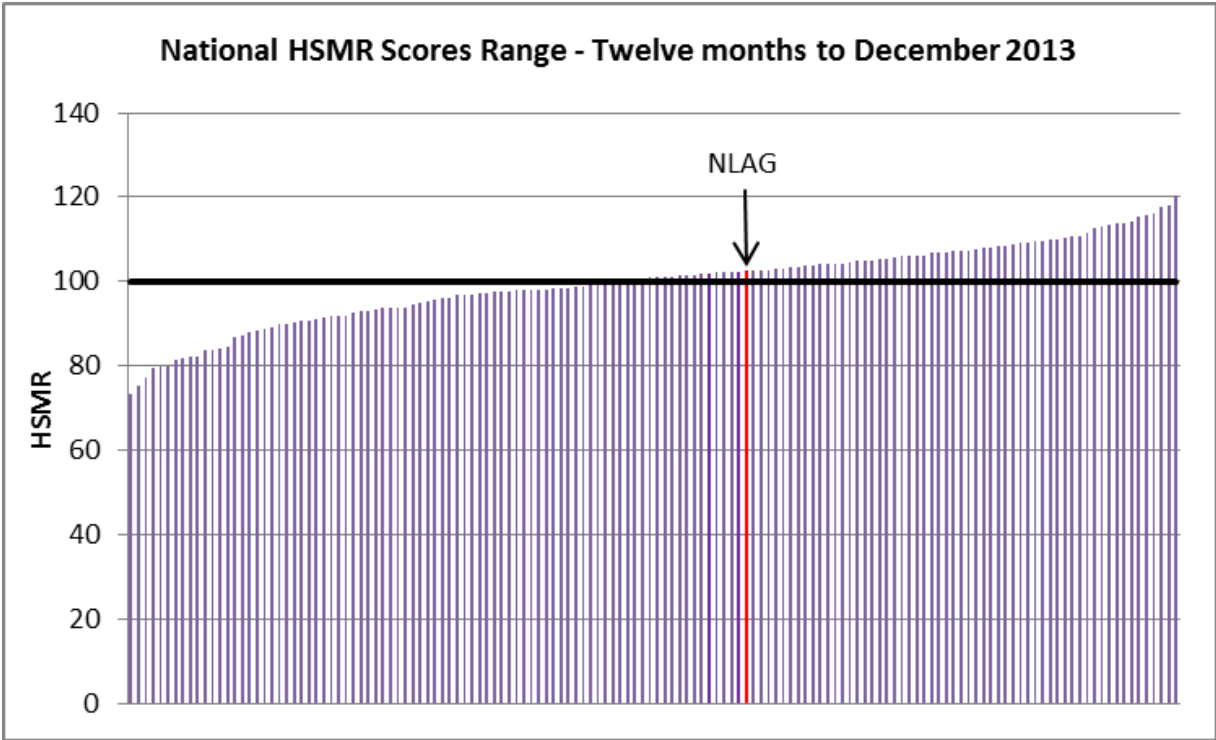
A section on the Trust's HSMR position follows.

4.10 Hospital Standardised Mortality Ratio (HSMR)

The Dr Foster Hospital Guide is released each November/December. The December 2013 release showed NLAG with an overall HSMR score of 109 for the twelve months to March 2013. This was on the borderline of the 'higher than expected' banding (the upper limit is 108.55) and showed a reduction of 9 points from the score of 118 for the previous year (twelve months to March 2012).

The HSMR was also provided for emergency weekend and weekday admissions. These figures showed a higher HSMR (113) for weekend emergency admissions than for those on a weekday (109). Both HSMRs were in the 'as expected' banding.

In terms of more recent data, the following, sourced from the Healthcare Evaluation Data (HED) toolkit, shows the Trust's most recent 12 months' HSMR score in comparison with other national Trusts.



Source: Information Services/HED

Comment: NLAG has a HSMR of 105 for the twelve months to December 2013, the national average being 100.

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4.0 Mortality Indicators

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➔ 5.0 CLINICAL CODING INDICATORS

5.1 Depth of Coding

5.2 Recording of Co-morbidity Codes

5.3 Signs and Symptoms “R” Codes

5.4 Palliative Care Coding

6.0 Update on Mortality Trigger Tool Work

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5.0 CLINICAL CODING INDICATORS

The following report outlining coding indicators is compiled by Information Services. It contains analysis of NLAG's performance in relation to those coding indicators that have an impact on mortality indicators such as SHMI, RAMI and HSMR.

Executive Summary:

The data contained within this section illustrates:

- **During the last year, the average depth of coding has improved in the trust and is better than the peer average. In February 2014 there were 5.0 diagnoses per coded episode compared to a peer of 4.4.**
- **Over the last twelve months, the number of co-morbidities recorded and coded has increased. In February 2014 there were 8428 co-morbidity codes. The continued full collection and recording of co-morbidities should be reasserted to clinicians.**
- **Over the last year, the percentage of admissions with an R signs and symptoms code has increased – 6.5% in February 2014 compared to 3.9% in February 2013. The percentage of first episodes with an R code as a primary diagnosis has been better than peer since October 2012. In January 2014, the trust had 6.8% of first episodes with a primary diagnosis R code – the peer average was 10.3%. Continued Clinical Coding input with clinicians on recording appropriate, specific diagnoses should continue.**
- **With regards to coded palliative care (Z515 code), the trust performance is better than the peer for the percentage of episodes with a palliative care code (Trust 1.0% v peer 0.7%).**

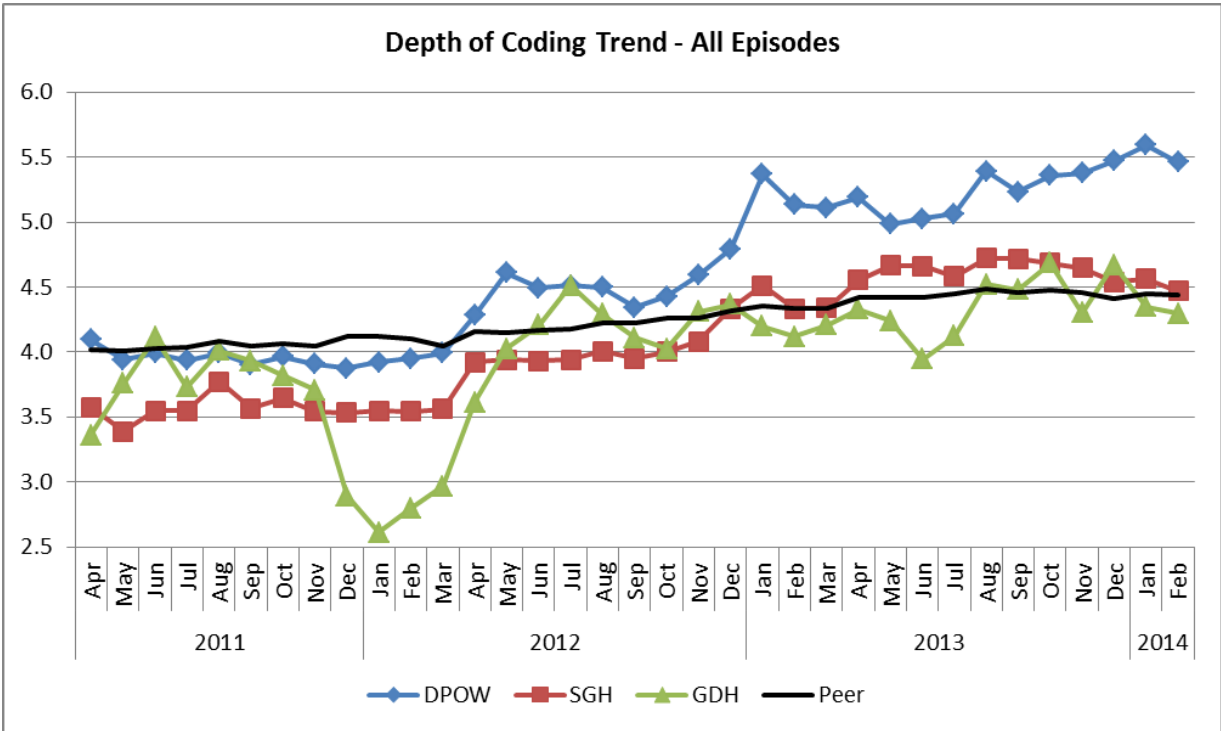
A lot of work has been invested into improving the recording in, and subsequent coding of, clinical casenotes. Pro-active work continues to take place in the communication between clinical staff delivering care and the coding team to ensure what is recorded on the data systems within the Trust is as accurate and in-depth as possible.

5.1 Depth of Coding

Depth of coding is the average number of diagnosis codes per episode of care. A high depth of coding reflects a wide source of clinical information captured in the casenotes that then goes on to be coded. It is widely recognised that a high depth of coding may be an advantage in relation to mortality indicators such as SHMI, RAMI and HSMR as it helps to accurately reflect the total number of “expected deaths”. This said, the quality of the source diagnoses in the casenotes is also important – having many non-specific diagnoses will not benefit the Trust in relation to mortality indicators.

Depth of Coding – April 2011 to present

The following graph shows the depth of coding for all episodes of care from April 2011 to present.



Source: Information Services/CHKS

Comment: You will see that since April 2012, Grimsby has performed above the peer average. Scunthorpe has been improving and since January 2013 has matched or beaten the peer average. Of late, Goole has performed close to the peer performance. The Trust has increased its depth of coding from 4.7 diagnoses per coded episode of care in February 2013 to 5.0 in February 2014. In the most recent month there were 48,905 diagnoses coded across the trust.

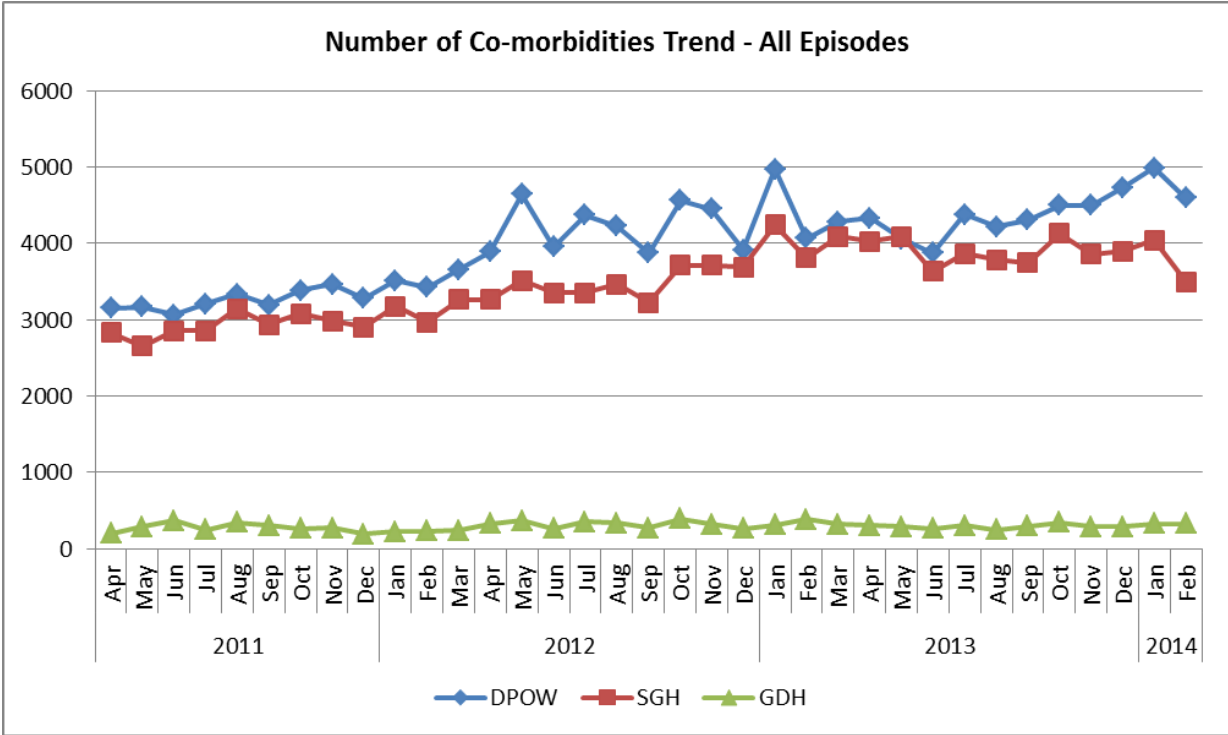
An analysis of the recording of co-morbidity codes, which can positively affect the ‘expected number’ of deaths in mortality ratios, such as SHMI, follows.

5.2 Recording of Co-Morbidity Codes

The recording and coding of co-morbidities is important to monitor as they affect the risk given to the patient in the SHMI statistical model. If co-morbidities are not recorded this could be reducing the “expected number of deaths” and therefore potentially raising our SHMI score. Fully recording co-morbidities also benefits RAMI and HSMR.

Number of co-morbidity codes coded

The following graph shows the number of co-morbidity codes coded from April 2011 to present.



Source: Information Services

Comment: The amount of co-morbidities coded has increased over the last year. The continued collection of co-morbidities, which should be supported by clinical management, should be stressed to help to continue to improve the amount of co-morbidities collected and coded. We have no benchmarking data to derive a peer comparison. There were 8428 co-morbidity codes collected in February 2014 across the Trust.

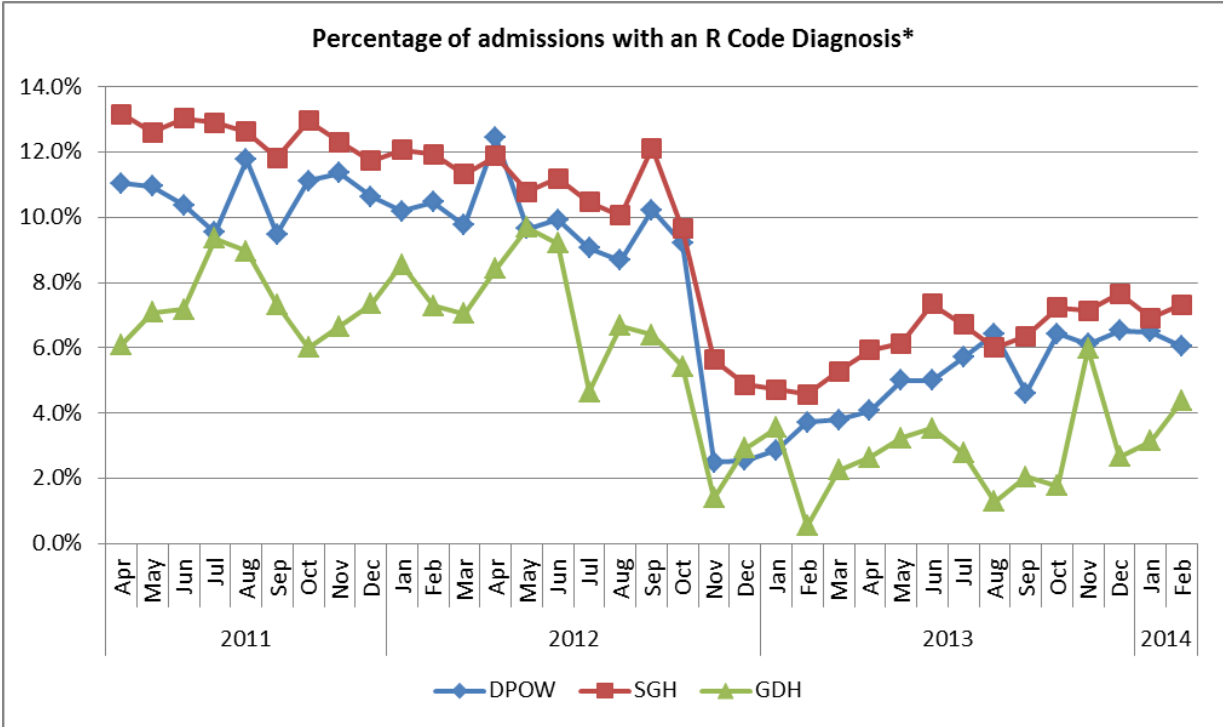
An analysis of the recording of signs and symptoms codes, which can adversely affect the ‘expected number’ of deaths in mortality ratios, such as SHMI, follows.

5.3 Signs and Symptoms “R” Codes

The recording and coding of primary diagnoses is important as this is one of the data items that affects the risk attached to the patient in the SHMI statistical model. If a diagnosis is recorded as a query or is not specific, then this is coded as an R signs and symptoms code. These R codes hold a lower risk, this in turn reduces the expected number of deaths having the outcome of a higher SHMI score. A reduction in R codes will also benefit RAMI and HSMR.

Percentage of patient admissions with an R code as a primary diagnosis

The following graph shows a site level trend of the percentage of patient admissions with an R code as a primary diagnosis.



* where multi episode spell has a primary diagnosis of an R Code in the first two episodes or where a single episode spell has a primary diagnosis of an R code in that single episode.

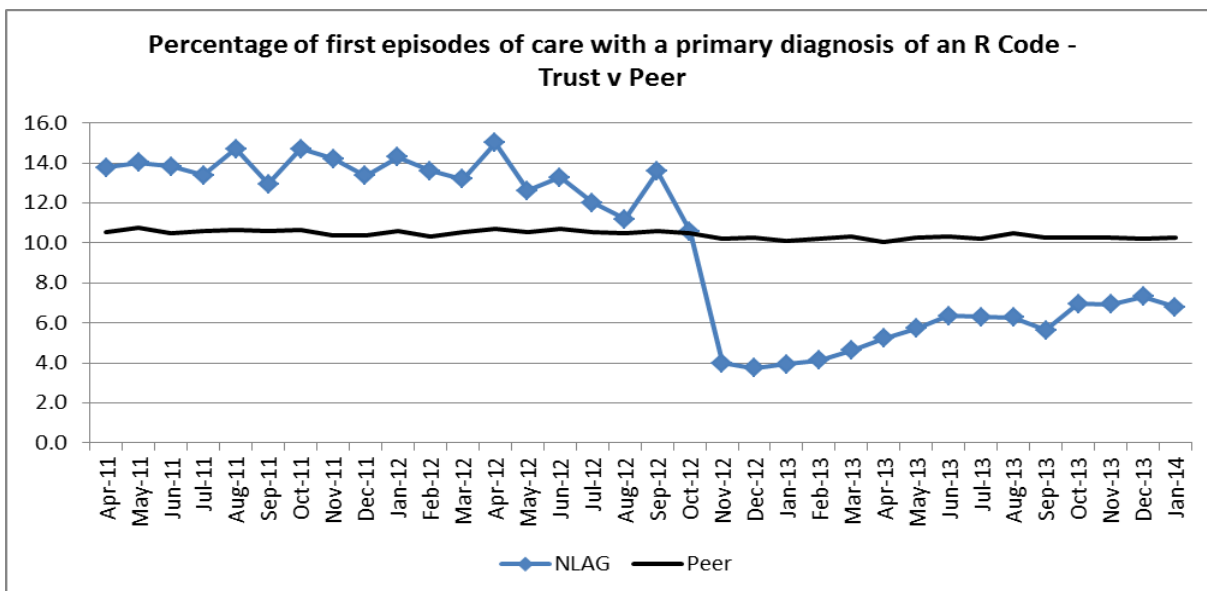
Source: Information Services

Comment: The percentage rate of admissions with an R code signs and symptoms diagnosis has showed an increase over recent months. A reduction will be achieved by clinicians recording appropriate, specific diagnoses upon admission. From October 2012, there was a substantial drop in the percentage of admissions with an R code signs and symptoms diagnosis. This reflects the work that was carried out with clinicians by Clinical Coding. However, the Trust level percentage has increased to 6.5% in February 2014 from 3.9% in February 2013. Numerically, there were 564 admissions with an R code in February 2014 – this has increased from 309 in February 2013.

Use of Signs and Symptoms R Codes – Benchmarked Position

Using the CHKS benchmarking system, we can benchmark our use of R codes against a peer average. The following graph shows the percentage of first episodes with a primary diagnosis of an R code.

The percentage of first episodes with a primary diagnosis of an R code



Source: Information Services/CHKS

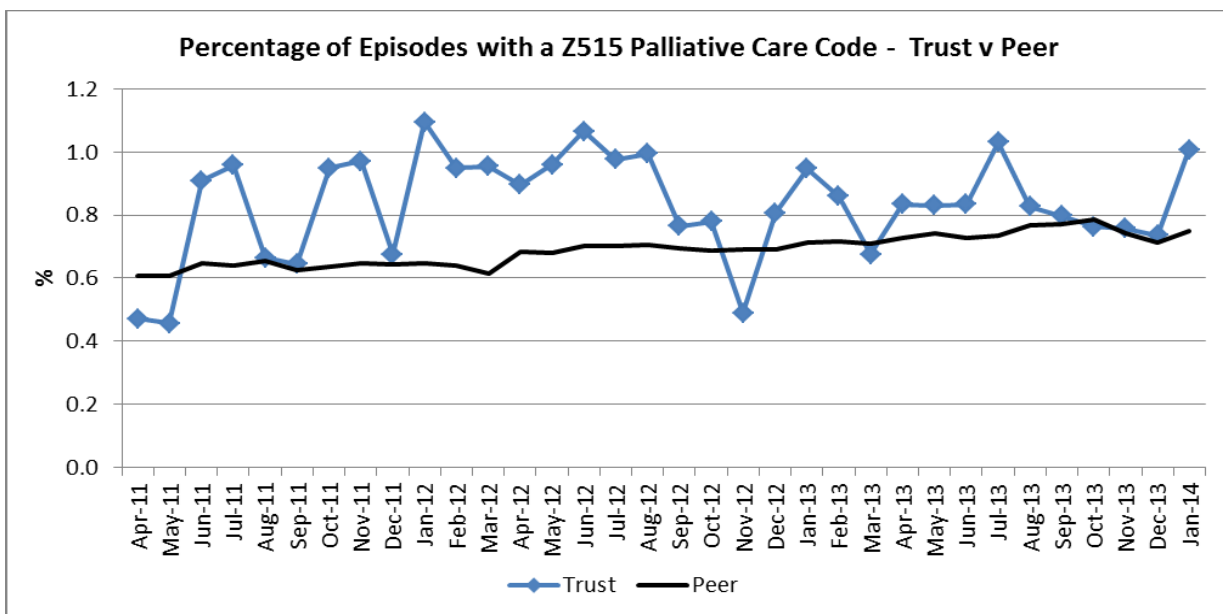
Comment: The graph shows that since October 2012, our rate against peer average for the percentage of first episodes of care with an R code as a primary diagnosis has improved (dropped). Our rate in January 2014 was 6.8% compared to a peer value of 10.3%. It is worth noting an increasing trend since January 2013.

5.4 Palliative Care Coding

The recording and coding of palliative care (Z515 code) for appropriate patients will exclude these patients from the RAMI indicator. The code is also used to adjust the Dr Foster HSMR statistic. Presently, the SHMI indicator makes no adjustment for palliative care.

Percentage of episodes with a Z515 palliative care code – Benchmarked Position

The following graph shows the percentage of episodes of care which were coded with a Z515 palliative care code against the peer average.



Source: Information Services/CHKS

Comment: In the main the trust has largely performed better than peer in the coding of palliative care when looking at all episodes of care. In January 2014, the trust coded 1.0% of episodes with the code v a peer average of 0.7%. The monthly numerical average is c. 70 episodes with this clinical code.

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5.0 Clinical Coding Indicators

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➔ 6.0 MORTALITY TRIGGER TOOL WORK

6.1 Overview of the Process

7.0 Update on Pathway Specific Mortality Action Groups

8.0 Nursing Staffing Levels

9.0 Glossary

6.0 UPDATE ON MORTALITY TRIGGER TOOL WORK

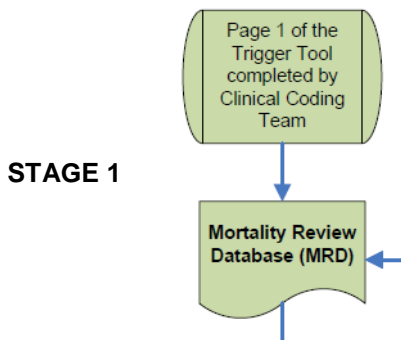
6.1 Overview of the process:

From the 1st April 2012 the Trust made the decision to review all deaths within the Trust using the Mortality Trigger Tool. The tool enables two objectives to be met:

- 1) Assess trends in almost 'real time' enabling proactive action to be taken,
- 2) Provide a means of escalating cases for a more detailed clinical review by a consultant (not involved in the care delivery to the patient) thus identifying additional causes of concern from a clinicians perspective.

Stage 1 of the process:

All patients having died within the Trust have their medical notes assessed using page 1 of the Trigger Tool. This review is completed by the Trust's Clinical Coding team.



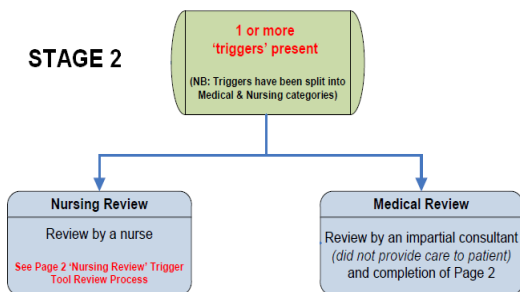
1,680 patients have been reviewed by the Clinical Coding team against page 1 of the Trigger Tool since January 2013.

The Trends from this review work are outputted to the Mortality Dashboard, which is monitored by Mortality Performance Committee (MPC).

Stage 2 of the process:

STAGE 2 of the review process involves a clinician review if 1 or more triggers (excluding patients on the Liverpool end of life Care Pathway not being reviewed every 48 hours by a senior clinician) have been identified as a result of stage 1. The trigger list has been updated to include additional nursing triggers and so when appropriate some cases require review by an impartial consultant (not involved in the care delivery of the patient) and/or a nurse, dependant on the triggers identified.

STAGE 2 was formally commenced in August 2012 following communication from the Medical Director, Dr Liz Scott, to all consultants within the Trust asking for their support. In December 2012, senior nurses begun to become involved in the review of cases that were identified as having 'nursing triggers'.



Of the 1,680, 1,605 (**96%**) patients had 1 or more Trigger identified during STAGE 1 review and are therefore eligible for review by a clinician.

At the time of writing since January 2013, 332 cases have now been reviewed by a consultant/senior middle grade.

At the time of writing, 189 cases have now been reviewed by a senior nurse.

The outcomes from this review are being reported via the Mortality Dashboard and informing stage 3 of the process, outlined below.

Stage 3 of the process – Medical Review:

Where learning points have been identified as a result of a senior doctor review, these cases are:

- Reviewed by the Medical Director/Group's Clinical Director,
- Significant concerns can then be escalated to the Executive Team,
- Cases offering learning will then be presented/discussed at a specific specialty specific Mortality Review Meeting (chaired by the Medical Director, senior medical member of the Mortality Performance Committee (MPC) or the Group's Clinical Director).

Stage 3 of the process – Nursing Review:

Where learning points have been identified as a result of the nursing review, these cases are:

- Reviewed by the Chief Nurse,
- Significant concerns can then be escalated to the Executive Team,
- Cases offering learning will then be presented/discussed at a specific nursing Mortality Review Meeting (chaired by the Chief Nurse).

Stage 4 of the process:

The outcomes from the mortality review discussions will be fed into the specialty group's Clinical Governance Meeting framework for their monitoring of resulting action plans.

The above process is being evaluated at the current time in order to ascertain an improved method of merging learning from medical and nursing reviews into one specialty focussing Morbidity and Mortality meeting. This will be discussed in more detail by the Mortality Performance Committee.

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- 4.0 Mortality Indicators
- 5.0 Clinical Coding Indicators
- 6.0 Update on Mortality Trigger Tool Work

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➔ 7.0 UPDATE ON PATHWAY SPECIFIC MORTALITY ACTION GROUPS

- 7.1 Acting on 'Themes' Identified

- 8.0 Nursing Staffing Levels
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7.0 UPDATE ON PATHWAY SPECIFIC MORTALITY ACTION GROUPS

7.1 Acting on the 'Themes' identified

Section 4 of this report provides a detailed summary of mortality performance at 'pathway' level. This information is supported by the 'action themes' from the Trigger Tool mortality review process.

In order to act on this information clinically-led teams have been set up to focus on taking action to improve specific pathway areas ensuring that pathways of care are clearly defined and followed. These groups will be accountable to the Mortality Performance Committee.

The pathway groups are as follows:

- Stroke Services
- Respiratory Medicine
- Gastroenterology
- Hospital Acquired Pneumonia
- Fluid Management
- Cardiac Arrests
- Sepsis
- Haematology/Oncology
- Diabetes & Endocrine
- ****NEW**** Acute Kidney Injury/Renal Failure
- ****NEW**** Venous Thromboembolism (VTE)

Supported by more general action groups focussing on:

- Safe staffing levels
- Data
- Emergency Services

The focus of these groups will be to act with the support of quality evaluation methods designed to measure the impact of such interventions.

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➔ 8.0 NURSING STAFFING LEVELS

8.1 Safe Nursing Levels as Monitored by E-Roster (Health Roster)

8.2 Acuity and Dependency Score

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8.0 NURSING STAFFING LEVELS

8.1 Safe Nursing Levels As Monitored By E-Roster (Health Roster)

8.2. Acuity and Dependency Score

The Trust has invested in Health Roster or as it is commonly referred to as e-rostering. This system and its roll out within the Trust has enabled nursing rosters to be centrally monitored and allows for operational matrons to access and quickly assure themselves that nursing rotas are safe. The system is also a useful tool for the Trust to determine if safe staffing principles are being adhered to. From the system it is possible for current and historical performance to be measured in terms of:

1. Shifts without charge cover,
2. Percentage of registered skill mix,
3. Percentage of rosters unfilled.

The indicators above are recognised as being numerical measures of nursing quality and offer an insight into the performance of the use of e-rostering which will directly affect the patient experience of care.

Over the past two years the e-rostering system has been embedded within the practice of producing nursing rosters for the Trust. Initially the focus was upon getting Managers to use the system. Over the past year since the restructure was completed, the focus has moved to enabling the Operational Matrons to take their part in confirming and challenging what is put upon nursing rosters in order to ensure that the valuable nursing resource is deployed in a manner that optimises safety and efficiency at the same time. Their work continues as it constitutes a step change in nursing practice.

The use of e-rostering has been an important step in the right direction when it comes to ensuring safe staffing levels and its usefulness has been demonstrated since implementation. However at present the acuity and dependency of those patients within the Trust is not able to be monitored on an on-going basis to reflect the changing levels of dependency as patients are admitted, transferred and discharged. This current inability to assess acuity and dependency in 'real time' means that tools such as e-rostering can only be of limited effect in ensuring safe staffing levels, based on the acuity and dependency on individual wards and the patients cared for within.

In an attempt to understand acuity and dependency, the Safer Nursing Care Tool (SNCT) evolved from the Association of United Kingdom University Hospitals (AUKUH) Patient Care Portfolio Project and was tested in over 40 NHS Hospitals over a 5 year period. It is an evidence-based easy to use tool which uses patient acuity and dependency to help plan for future workforce development. Currently it is aimed at acute general adult inpatient areas and is a functional tool that enables Nurses, Matrons and Divisional Managers to identify risk and influence and apply resources appropriately.

The SNCT provides a useful snapshot indication as it is used in line with national guidance which requires assessment twice a year for each ward and over a 20 day period. The data from this is therefore not robust enough to base staff rosters on, but rather provides an indicator of current practice. Historically this indicator of practice was presented within this section. It should be noted however that the budgeted establishment illustrated in previous charts presented in this section, do not reflect the increased establishment that has been agreed through the Confirm & Challenge process in some areas as this has not yet been applied by the Directorate of Finance.

As a result of all these limitations, the Trust are currently working with Allocate Software (who supply the Trust's current e-rostering system) to review a new application – the SaferCare module. This will support the Trust moving to the collection of daily acuity data throughout the year. This will then allow for effective mapping of acuity and dependency to staffing

rosters, ensuring safe staffing levels – as evidenced not simply by filled rosters – but against the clinical need of each ward area.

To provide further usable information on this area, the Trust's Web V development team are working to develop acuity measures that can be seen 'at a glance' through the clinical portal. Both projects will support the Operations Centre and Matrons to understand the acuity of patients on the ward when needed enabling the allocation of the most appropriate level of staff to meet these demands.

With these developments underway, it is felt that the current suite of indicators available do not present a true reflection of safe staffing levels and therefore do not provide full quality assurance. The new SaferCare module will take into account the month to month variability in some clinical areas resulting in more accurate and robust acuity data. When this more robust information is available to provide assurance, it will be reported within this section of the monthly mortality report.

9.0 Glossary

Benchmark Peer Group: Calderdale and Huddersfield NHS Foundation Trust, Chesterfield & North Derbyshire Royal Hospital NHS Trust, Countess of Chester NHS Foundation Trust, County Durham and Darlington NHS Foundation Trust, Doncaster and Bassetlaw Hospitals NHS Trust, North Cumbria University Hospitals NHS Trust, North Tees & Hartlepool NHS Trust, Rotherham NHS Foundation Trust, Royal Bolton Hospital NHS Foundation Trust, The Pennine Acute Hospitals NHS Trust, University Hospitals of Morecambe Bay NHS Trust

Cardiac bundle: The new bundle is comprised of the following HRG4 subchapters:

Procedures: Catheter 19 years and over, Pace 1 - Single chamber or Implantable Diagnostic Device, Pace 2 - Dual Chamber, Percutaneous Coronary Intervention (0-2 Stents), Complex Echocardiogram (include Congenital Transoesophageal and Fetal Echocardiography), Simple Echocardiogram, Electrocardiogram Monitoring and stress testing, Percutaneous Coronary Intervention (0-2 stents) and Catheterisation, Minor Cardiac Procedures, Other Non-Complex Cardiac Surgery + Catheterisation, Pace 1 - Single chamber or Implantable Diagnostic Device and other (Catheterisation; EP; Ablation; Percutaneous Coronary Intervention), Congenital Interventions: Other including Septostomy Embolisations Non-coronary Stents and Energy Moderated Perforation, Pacemaker Procedure without Generator Implant (includes resiting and removal of cardiac pacemaker system), Percutaneous Coronary Interventions with 3 or more Stents, Implantation of Cardioverter - Defibrillator only, Percutaneous Coronary Interventions with 3 or more Stents and Catheterisation, and Intermediate Congenital Surgery.

Cardiac Disorders: Non interventional acquired cardiac conditions 19 years and over, Arrhythmia or Conduction Disorders without CC, Syncope or Collapse without CC, Actual or Suspected Myocardial Infarction, Heart Failure or Shock without CC, Deep Vein Thrombosis, Syncope or Collapse with CC, Heart Failure or Shock with CC, Hypertension without CC, Arrhythmia or Conduction Disorders with CC, Cardiac Valve Disorders, Hypertension with CC, Endocarditis, Cardiac Arrest, and Non-Interventional Congenital Cardiac Conditions.

Common Cause Variation: an inherent part of the process, stable and "in control". We can make predictions about the future behaviour of the process within limits. *When a system is stable, displaying only common cause variation, only a change in the system will have an impact.*

Control Limits: indicate the range of plausible variation within a process. They provide an additional tool for detecting special cause variation. A stable process will operate within the range set by the upper and lower control limits which are determined mathematically (3 standard deviations above and below the mean). The upper control limit is displayed in blue throughout this report. The lower control limit is displayed in teal throughout this report.

Crude Mortality Rate: The crude mortality rate is based on actual numbers. Unlike the HSMR which features adjustment based on population demographics and related mortality expectations.

The local benchmarking rate for crude mortality is adjusted quarterly. The latest adjustment reflects January 2010 data.

Hospital Standardised Mortality Rate (HSMR): The HSMR is a method of comparing mortality levels in different years, or between different hospitals. The ratio is of observed to expected deaths, multiplied conventionally by 100. Thus, if mortality levels are **higher** in the population being studied than would be expected, the HSMR will be greater than 100. This methodology allows comparison between outcomes achieved in different trusts, and facilitates benchmarking.

Mortality by Diagnosis Group: These comparisons can be and are made for a large number of conditions and operations. The three chosen are common conditions affecting many people.

Some people with acute myocardial infarction (heart attack), fractured neck of femur (broken hip) and stroke die before they can be admitted to hospital. However, there are variations in hospital death rates among those who survive long enough to be admitted.

Some of these deaths may be potentially preventable through faster ambulance response times and effective early treatments, so these figures may be considered as indicative of the overall outcome of care in the Trust.

Moving Annual Total (MAT): The most recent months performance with the previous 11 months included thus providing an annual average. This is an effective way of presenting monthly performance data in a way that reduces some of the expected variation in the system i.e. seasonal factors providing a much smoother view of performance allowing trends to be more easily discerned.

Risk Adjusted Mortality Indicator (RAMI): This is a risk adjusted standardised mortality ratio used by CHKS software which has been purchased by the Trust to monitor and analyse it's data.

Summary Hospital-Level Mortality Indicator (SHMI): The most recently developed mortality ratio designed to be used to allow comparison between NHS organisations.

Sigma: A sigma value is a description of how far a sample or point of data is away from its mean, expressed in standard deviations usually with the Greek letter σ or lower case s. A data point with a higher sigma value will have a higher standard deviation, meaning it is further away from the mean.

Special Cause Variation: the pattern of variation is due to irregular or unnatural causes. Unexpected or unplanned events (such as extreme weather recently experienced) can result in special cause variation. Systems which display special cause variation are said to be unstable and unpredictable. When systems display special cause variation, the process needs sorting out to stabilise it. This report includes two types of special cause variation, trends and outliers. If a trend, the process has changed in some way and we need to understand and adopt if the change is beneficial or act if the change is a deterioration. The outlier is a one-off condition which should not result in a process change. These must be understood and dealt with on their own (i.e. response to a major incident).

Standard Deviation: Standard deviation is a widely used measurement of variability or diversity used in statistics and probability theory. It shows how much variation or "dispersion" there is from the "average" (mean, or expected/budgeted value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values.