

Board Assurance Report on Hospital Mortality

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Background

The hospital standardized mortality ratio (HSMR) compares the observed number of deaths in a given hospital with the expected number of deaths based on national data, after adjustment for factors that affect the risk for in-hospital death, such as age, diagnoses and route of admission.

A HSMR equal to 100 indicates that a hospital's observed mortality rate equals that expected on the basis of its casemix. A ratio greater than 100 theoretically indicates that a hospital's mortality rate exceeds the expected value (i.e., exceeds average value for hospitals with the same types of patients).

The HSMR has been subject to academic criticism due to the susceptibility of the measure to be excessively influenced by non clinical factors such as coding depth and the quality of administrative data (NEJM; Dec. 2010 - <http://www.nejm.org/doi/pdf/10.1056/NEJMsa1006396>). Published studies also suggest that HSMRs correlate weakly with other measures of quality of care (CMAJ; July 15. 2008). However it can be a useful measure in the suite of screening and surveillance indicators and may help flag potential problems.

RWHT has had a HSMR score in excess of 100 over a length of time, a project team led by the Trust's Director of Governance was tasked to understand the reasons behind this so that change strategies could be informed.

This paper presents the interim findings.

Project Overview

Project objectives and desired outcomes

- To document at a greater level of detail the reasons behind the Trust's current HSMR. This will enable Trust leadership to identify whether the problem is administrative or whether further clinical investigation is necessary in specific areas.
- To clinically appraise "Outlier Areas", so that if there are any issues pertaining to patient care, these are systemically addressed.
- To ensure that the underlying clinical coding data which constitutes HSMRs is robust and reliable so that the Board and clinicians have absolute confidence in the data
- To make recommendations based on the findings of all of the above.

The Project team

Project/Clinical Lead	Dr David Churchill, Director of Governance
Coding Reviewer	Sian Litkowski, Head of Clinical Coding
Information Analysis	Paul Franklyn, Head of Information John White, Senior Analyst
Report Author	Sultan Mahmud, Associate Director

Key Elements of the Project

Work stream 1: Enhanced Information Modelling

Work stream 2: Enhanced Clinical Audit of Outlier Areas

The HSMR Construction

$$\text{HSMR} = \frac{\text{Observed Deaths}}{\text{Expected Deaths}} \times 100$$

The Dr Foster HSMR calculation is based upon the 56 major diagnosis groups which account for approximately 80% of hospital activity. Calculating the ratio begins with assigning a probability of dying to each eligible patient who has received care under the 56 diagnosis groups. The expected number of deaths in is the sum of the estimated risks of death for every patient.

Expected Deaths:

Risks take into account those patient characteristics that are most strongly correlated with death and which reflect the patient's risk profile rather than the way in which the hospital has treated them. These factors are:

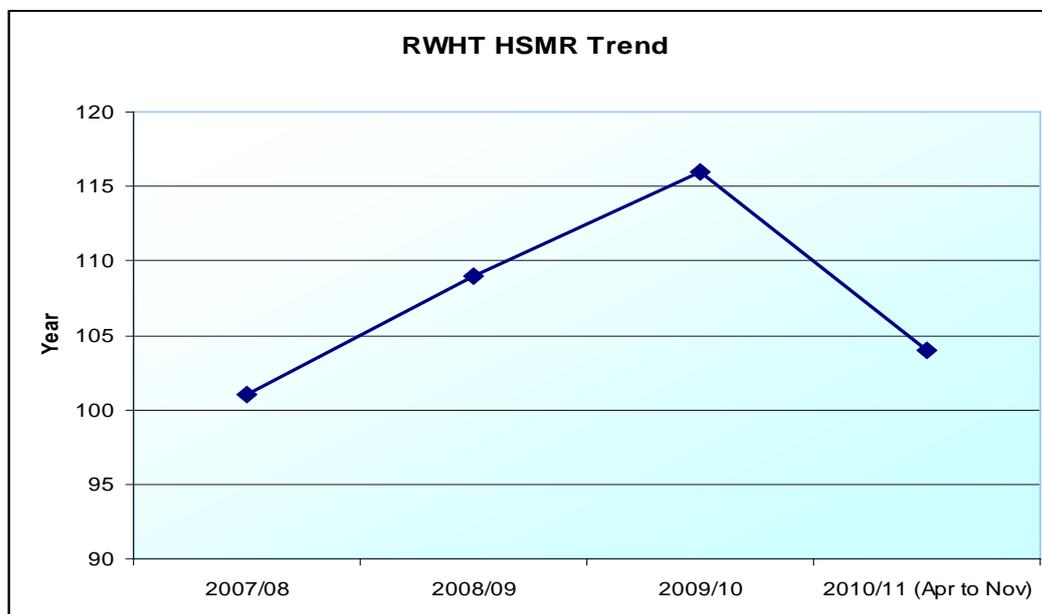
1. Diagnosis
2. **Levels of Co-morbidity- as described by the Charlson Index of Codes**
3. Age
4. Sex
5. Deprivation
6. Ethnicity
7. Method of Admission
8. Month of Admission
9. Source of Admission
10. **Whether or not palliative care**

The HSMR score is extremely sensitive to particular aspects of clinical coding which have a major bearing on the level of patients 'expected to die' at a hospital. These are the diagnosis codes which make up the Charlson Index of codes linked to a likelihood of death, and the presence of the Z515 diagnosis code for palliative care.

Patients with a lower Charlson index (less comorbidity) have lower expected mortality in the Dr Foster HSMR. Therefore, if the Charlson index was systematically under-coded in a hospital it would be assigned artificially inflated standardised mortality ratios and vice versa.

This project will investigate whether the level of Charlson index coding at RWHT is materially different to peer group trusts.

RWHT HSMR Trend



Indicator	2008/09	2009/10	2010/11 (Apr to Nov)
RWHT	109	116	104

Source Dr Foster

HSMRs compare the number of deaths that occurred with the number that are predicted by the Dr Foster statistical model.

Since 2008/9 the actual number of observed deaths at the trust has been falling. Its mortality rate is also lower than 2008/9 levels.

The trust's latest HSMR of 104 (unrebased) is at its lowest level for a considerable length of time. However as this is above national average (100) the trust remains vigilant and continues to investigate both its clinical and information processes to determine the cause of the high HSMR.

Work stream 1: Enhanced Information Modelling

The Expected Deaths Anomaly

HSMRs compare the number of deaths that occurred in a trust with the number that are predicted by the Dr Foster statistical model.

There are 9 acute trusts in the West Midlands that provide in excess of 30,000 spells of care per annum. The expected mortality as derived by Dr Foster is expressed as percentage and is set out below in Table [1a].

2009/10 Expected Mortality

Peer (SHA)	Superspells	Observed Deaths	Expected Deaths	% Expected Deaths	HSMR
WM Acute Trust 1	66239	2874	2956.1	4.50%	97
WM Acute Trust 2	46607	1815	1897	4.10%	96
WM Acute Trust 3	41296	1595	1626.4	3.90%	98
WM Acute Trust 4	39981	1650	1565.2	3.90%	105
WM Acute Trust 5	38627	1602	1362.4	3.50%	118
RWHT	35007	1371	1171	3.30%	116
WM Acute Trust 7	34961	1820	1788.5	5.10%	102
WM Acute Trust 8	31924	1479	1283.5	4.00%	115
WM Acute Trust 9	29908	1394	1263.5	4.20%	110

Basket: Diagnoses - HSMR Benchmarks: Data Year Outcome: Mortality (in-hospital)

Chapter: All Diagnosis Group: All Department: All Team: All

Admission Type: All Sex: All Deprivation: All Age Range: All

Spells: 494047 Superspells: 482579 (309295 / 173284) First / Last: Apr-09 / Mar-10 Deaths: 21313 (4.4%) Expected: 20336.6 (4.2%)

Relative Risk: 104.8 (103.4 - 106.2) C-Statistic: 0.84 (High) LoS: 9.2 / 9.1

A super spell is the collected term of all the spells for a single patient

Table [1a] Source Dr Foster

It is to be noted that RWHT had the lowest expected mortality at 3.3% which translates to 1171 expected deaths. If this is compared to *Acute trust 7* which provided a very similar amount of spells, **RWHT was expected to have [618] less deaths despite being a tertiary centre.** If the same expected deaths ratio was applied to RWHT then the HSMR for 2009/10 would have been [77] as opposed to [116].

In 2009/10 the average expected death rate for the above trusts excluding RWHT was 4.2%, if this death rate was applied to RWHT this would translate to 1470 expected deaths (an increase of 299). The resulting HSMR for 2009/10 would become [93] as opposed to [116].

$$\text{HSMR} = \frac{\text{Observed Deaths } 1371}{\text{Expected Deaths } 1470} \times 100 = 93$$

Table 1b

2010/11 Expected Mortality

Peer (SHA)	Superspells	Observed Deaths	Expected Deaths	% Expected Deaths	HSMR
WM Acute Trust 1	45152	1787	2053.4	4.50%	87
WM Acute Trust 2	30819	1274	1283.6	4.20%	99.3
WM Acute Trust 3	27661	1031	1132.4	4.10%	91
WM Acute Trust 4	27051	978	1014.2	3.70%	96.4
WM Acute Trust 5	25673	1030	975.1	3.80%	105.6
RWHT	23890	902	856.3	3.60%	104
WM Acute Trust 6	24170	1117	1150.9	4.80%	97.1
WM Acute Trust 7	21418	917	886.1	4.10%	103.5
WM Acute Trust 8	20419	886	869.7	4.30%	101.9

Basket: Diagnoses - HSMR Benchmarks: Data Year Outcome: Mortality (in-hospital)
 Chapter: All Diagnosis Group: All Department: All Team: All
 Admission Type: All Sex: All Deprivation: All Age Range: All
 Spells: 333490 Superspells: 326380 (207161 / 119219) First / Last: Apr-10 / Nov-10 Deaths: 13242 (4.1%) Expected: 13825.1 (4.2%)
 Relative Risk: 95.8 (94.2 - 97.4) C-Statistic: 0.84 (High) LoS: 8.8 / 9.2

Source Dr Foster: Data Apr-Nov10

It is to be noted that RWHT has the lowest expected mortality at 3.6% which translates to 856 expected deaths. If this is compared to *Acute trust 6* which has provided a very similar amount of spells, RWHT is YTD expected to have [294] less deaths despite being a tertiary centre. If the same number of expected death ratio was applied to RWHT then the HSMR for 2010/11 YTD would have been [70] as opposed to [104].

In 2010/11 the average expected death rate for the above trusts excluding RWHT year to date is 4.2%, if this rate was applied to RWHT it would result 1000 expected deaths (an increase of 144).The resulting HSMR for 2010/11 would become [90] as opposed to [104]. Dr Foster agree that the data suggests that the RWHT have a lower than expected mortality rate than peers in the West Midlands.

It is reasonable to assume that RWHT does not have healthier patients than other West Midlands Acute providers and accordingly its low expected deaths figure as derived by Dr Foster needs to be investigated further. The Marmot review of key indicators of the social determinants of health published in 2010, shows Wolverhampton to be significantly worse than the national average for 6 out of the 10 indicators. The Health Profile (2010) produced by the Department of Health and the Association of Public Health Observatories based on the Index of Multiple Deprivation also shows significant outlier status across a range of deprivation indicators.

The major Factors which impact upon a trust's expected mortality is the level of Charlson Coding, Palliative Care Coding. Table [1c] shows that in previous years the trust's rate of capture of these codes were below national benchmark levels, however these rates have improved in current financial year.

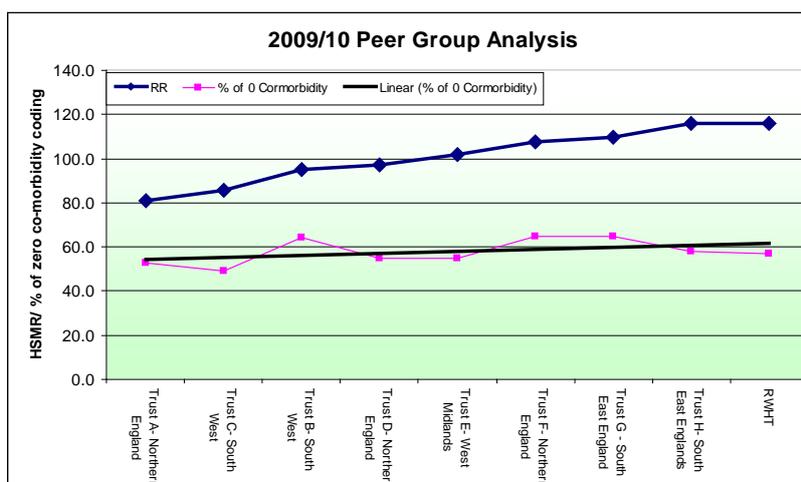
Changes in Coding at RWHT

	07/08	08/09	09/10	10/11
Charlson rate as index of national average	90	85	85	96
Palliative care coding rate	1.1%	1.0%	1.2%	1.8%
Palliative care rate as index of national average	99	71	63	83
HSMR	101	109	116	104

Table [1c] Source Dr Foster

Notwithstanding these improvements, the trust in conjunction with Dr Foster further investigated areas of possible under coding relative to peer group trusts. In a peer group based on patient volumes, 2009/10 full year data showed that, RWHT had the highest HSMR and the lowest expected number of deaths. However in terms of percentage of spells ending in a death the trust was not an outlier.

To investigate this, the level of Charlson co-morbidity coding for over 65 year olds was compared with the HSMR score, and a discernible inverse relationship was found. The over 65 year old age band is where co-morbidities are most likely to occur based on Dr Foster analysis.



Source: Dr Foster

* Peer Group based on number of spells provided

Action: Resubmission of SUS data

1. As a result of several analyses, RWHT will resubmit data for the 2010-11 financial year so that all co-morbidities recorded in the patient case notes are captured electronically in the relevant SUS data field which the Dr Foster methodology uses to casemix adjust. Preliminary analysis has shown that several hundred care episodes could possibly be amended to include a Charlson Co-morbidity. The deadline for submission is the 23 February 2011; any impact into the expected mortality and HSMR will not be seen until April 2011. Further submissions will also be made in March 2011 again any impact will not be seen for two months.
2. A joint investigation in conjunction with Dr Foster's analytics team has been initiated. A report to the trust's Chief Executive on the risk factors contributing to the expected mortality rate and their possible link with prevalent coding practices will be completed by the end of March 2011.

Palliative Care Coding

Whilst Palliative care coding rates have been relatively low in previous years, our analysis suggests that RWHT now codes at appropriate levels and in adherence to conventions laid out by DH. The adherence to palliative care coding rules has been open to abuse and the proposed Standardised Hospital Mortality Indicator (SHMI) developed by the DH will exclude deaths coded as palliative care.

Deprivation

After consultation with the Dr Foster analysis team, it became clear that deprivation is not sufficiently weighted in the current calculation of expected deaths to make a material impact on HSMR.

Work stream 2: Enhanced Clinical Audit of Outlier Areas

Clinical Audit

Notwithstanding coding sensitivity of the Dr Foster HSMR, the trust remains highly vigilant in investigating mortality. After careful analysis of 2009/10 and 2010/11 mortalities, a clinical audit was commissioned to take an in- depth look at over 70 in hospital deaths across 20 different HRGs and included Septicaemia, Cardiology and Respiratory patients who have died in hospital this year. The aim of the audit is to;

- To identify any systemic clinical process and safety issues
- To clinically evaluate the original coding of diagnosis and co-morbidity of recent in-hospital deaths
- Clinical verification of coding and administrative data
- Joint review of mortalities by service level clinicians and clinical coders

As the data capture for the audit is not going to be completed until 18th February only high level preliminary findings based on the audits completed to date are presented below;

1. The treatment provided by the trust was clinically appropriate
2. All patients had coded co-morbidities

Further details will be made available upon completion of the audits and will be subject to clinical corroboration by the Mortality Review Committee.

To ensure of a level of external Quality Assurance, the Director of Public Health at Wolverhampton City Primary Care Trust will evaluate the process. His findings will be carefully considered in any mortality improvement strategies developed by the trust.

In view of the incomplete status of the clinical audit, it is worth restating the findings of previous audits completed as part of the CQC alert process. This is shown on pages 13 and 14.

Outcomes of Previous Alerts

Mortality Issue	RWHT Response	Outcome
<p>Pulmonary Heart Disease ICD-10 diagnosis of I26.9- <i>Pulmonary Embolism without mention of acute cor pulmonale</i>- Higher than expected mortality of Patients admitted as an emergency in the over 70 category</p> <p>Alert by:</p> <p>Dr Foster Intelligence Unit: August 2008 Healthcare Commission: March 2009</p>	<p>As part of trust's standard monitoring process, RWHT conducted in-depth analyses of 14 cases using the NHS institutes Global Trigger Tool and mortality review matrix forms.</p> <ol style="list-style-type: none"> 1. Established that no single clinician was at fault 2. Thromboprophylaxis mismanagement ruled out 3. Several of these patients were at the end of life with terminal illness. 4. 3 patient's diagnosis of pulmonary embolism was questionable. 5. 2 deaths were identified as being potentially avoidable, although both had multiple co-morbidities and were classed as complex. The lessons learnt and areas of concerns escalated to Quality and Safety Committee (a formal subgroup of the trust board). 	<p>The Trust's executive management team and mortality committee were satisfied that the reported high mortality rates in I26.9 were risk assessed, the explanations explored and appropriate actions were taken by the clinical team to ensure the safety of patients.</p> <p>The CQC formally wrote to the trust in August 2009 to acknowledge that the matter was closed and that they were satisfied with the trust process.</p>
<p>Septicemia (except in labor) Most Deaths from septicaemia coded as A41.9 (unspecified septicaemia).</p> <p>Alert by:</p> <p>Dr Foster Intelligence Unit: December 2008 Healthcare Commission: 21 May 2009</p>	<p>As part of trust's standard monitoring process RWHT conducted in-depth analyses incorporating case note reviews using the NHS institute's Global Trigger Tool and mortality review matrix forms. The following was established</p> <ol style="list-style-type: none"> 1. The proportion of deaths coded as A41.9 (unspecified septicaemia) has remained stable over the last three years. 2. The vast majority of patients had several co-morbidities and that septicaemia was the last in a series of illnesses suffered by the patients. 3. Case note analysis found that there was NO evidence of sub standard care and it was noted that the majority of cases had serious co morbidities. 4. The coding of unspecified septicaemia was accurate. 5. Detailed Bacteriology of the cases did not reveal any anomalies. 	<p>The Trust's executive management team and mortality committee were satisfied that the number of deaths with patients coded as A41.9 (unspecified septicaemia) was risk assessed and the explanations were scrutinised and understood. The Trust was accepted the ongoing actions undertaken by the clinical team to ensure the safety of patients.</p> <p>The CQC formally wrote to the trust in August 2009 to acknowledge that the matter was closed and that they were satisfied with the trust process.</p>

Mortality Issue	RWHT Response	Outcome
<p>Lobar, atypical or viral pneumonia Emergency admissions coded in HRG D13 (Lobar, atypical or viral pneumonia with complications and co-morbidities)</p> <p>Alert by:</p> <p>Care Quality Commission: September 2009</p>	<p>As part of trust's standard monitoring process</p> <p>RWHT conducted case note analyses of 34 patients which represent a 10% sample of the patients that died from pneumonia in 2008-9 who had the primary code J18.1 and J18.9. The following was established</p> <ol style="list-style-type: none"> 1. None of the 34 cases were avoidable 2. 5 of the 34 cases were miscoded and did not show any evidence of Pneumonia. 3. Of the 29 remaining cases, a further 5 had significant co-morbidities which were not listed on the KMR1 4. Only 4 cases out of 34 had a microbiological cause found for Pneumonia 	<p>The Trust's executive management team and mortality committee were satisfied that the reported high mortality rates in Emergency admissions coded in HRG D13 were clinically risk assessed and the explanations were scrutinised and understood. The seven recommendations by the Pneumonia clinical audit were implemented and are actively monitored by the Trust's governance processes to ensure the safety of patients.</p> <p>The CQC formally wrote to the trust in January 2010 to acknowledge that the matter was closed and that they were satisfied with the trust process.</p>

Previous audits arising from CQC alerts do not suggest that are systemic clinical issues contributing to the trust's high HSMR.

Whilst HSMRs correlate weakly with other measures of quality of care, it is important to review other indicators of safety and quality to assure staff, patients and external bodies that top quality clinical services are being provided. The following section provides examples of clinical quality.

Other Mortality Information

Death Rates Based on Activity

Indicator	RWHT	Peer Group
Percentage of <u>Observed deaths per Superspell Provided</u> 2009/10 Source Dr Foster	4.1%	4.4% Top 8 West Midlands providers by volume
Percentage of <u>Observed deaths per Superspell Provided</u> 2010/11* Source Dr Foster- *April- November 2010	3.8%	4.1% Top 8 West Midlands providers by volume

A super spell is the collected term of all the spells for a single patient

Basket: Diagnoses - HSMR Benchmarks: Data Year Outcome: Mortality (in-hospital)
 Chapter: All Diagnosis Group: All Department: All Team: All
 Admission Type: All Sex: All Deprivation: All Age Range: All
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2009/10 Concatenated Mortality Report

Summary of Dr Foster Raw Data and Bandings

RL4	The Royal Wolverhampton Hospitals NHS Trust	Banding
Mortality	HSMR	High
	SMR - basket of 5 conditions	High
	Failure to Rescue	Within expected range
Orthopaedics	Hip Replacement 28 day Readmission Ratio	Within expected range
	Knee Replacement 28 day Readmission Ratio	Within expected range
	Hip Revision Rate	Within expected range
	Knee Revision Rate	Within expected range
	FNOF Standardised Mortality Ratio	Within expected range
	FNOF Procedure within 2 days	Low
Stroke	Stroke SMR	Within expected range
	Stroke Readmissions	Within expected range
	Joint scan Significance	Within expected range
	Thrombolysis Rates	Low
	Pneumonia	Within expected range
Obstetric	Discharge to Usual Place of Residence (56 Days)	Within expected range
	Obstetric tears - Vaginal delivery with instrument	Within expected range
Urology	Obstetric tears - Vaginal delivery without instrument	Low
	TURP 3 year Redo rates	Within expected range
Patient Safety	TURP 28 day Readmission Ratio (2009/10)	Within expected range
	Composite	Low PSI composite
	AHRQ: PSI 3 Decubitus Ulcer	Within expected range
	AHRQ: PSI 4 Failure to Rescue	Within expected range
	AHRQ: PSI 9 Postoperative Haemorrhage or Haematoma	Low
	AHRQ: PSI 11 Postoperative Respiratory Failure	Within expected range
	AHRQ: PSI 13 Postoperative Sepsis	Within expected range
AHRQ: PSI 15 Accidental Puncture or Laceration	Low	
Readmissions	CABG - % of readmissions for specific diagnoses	68.4%
	Stroke - % of readmissions for specific diagnoses	20.0%

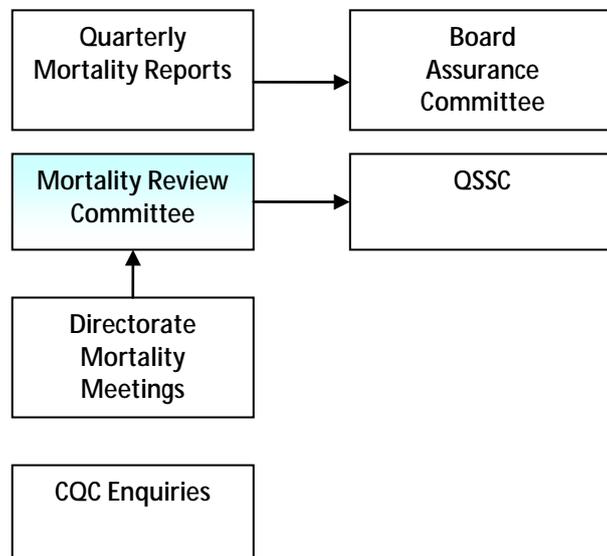
When HSMR is considered against a broad range of mortality information, the trust is not an outlier in respect of national and local peer hospitals of similar size and casemix.

SPECIFIC CLINICAL AREAS

Clinical Area	RWHT Position
ICU Mortality	Number of Hospital Deaths among Valid Patients based on the APACHE II SMR has shown continuous reduction from 25.6% mortality in 2006/7 to 21.6 in 2009/10
Cardiothoracic/Cardiac Surgery Mortality	<p>Coronary angioplasty relative risk was in 2009/10 was below the NHS West Midlands Average</p> <p>Cardiac Pacemaker relative risk in 2009/10 was below the NHS West Midlands Average and in 2010/11* was the lowest in the West Midlands.</p> <p>Coronary artery bypass graft CABG relative risk was in 2009/10 and 2010/11* was the lowest in the West Midlands</p> <p>All Cardiac Surgery (combined) relative risk was in 2009/10 and 2010/11* was the lowest in the West Midlands</p> <p>Source Dr Foster * April- Nov 2010</p>
Survival Rates for <i>Clostridium difficile</i> infection	<p>In a peer group of the top performing trusts for HCAs RWHT's 30 day survival rates were only bettered by one other trust.</p> <p>Source: Peer group study- RWHT</p>
MRSA bacteraemia	RWHT has passed 600 days without MRSA bacteraemia
Joint Advisory Group on Endoscopy	<p>In June 2010 RWHT received full 5 year certification based on clinical quality, safety, decontamination and patient experience</p> <p>Source: JAG</p>
Rheumatology Peer Review	<p>The visiting team noted five extremely strong areas worthy of commendation</p> <p>Source: BSR and BHP in Rheumatology 2010</p>
Report on the Post Liverpool Care Pathway (LCP)	<p>Post Implementation of the Liverpool Care Pathway for the Dying. The trust achieved markedly better performance compared to national figures, for all six indicators of quality and safety.</p> <p>Source: 2010 Audit</p>
Diabetes Services	<p>This reformatting service was associated with a marked improvement in a number of parameters relevant to inpatient care.</p> <p>Source: Oxford Journals qjmed.oxfordjournals.org (January 2009)</p>
Standards for the care of critically ill and critically injured children	<p>In light of the excellent rating achieved in 2006 the trust was exempt from Peer Review 2009/10 because of the high standards of care achieved in 2006.</p> <p>Source: NHS West Midlands (StHA)</p>
UNICEF UK Baby Friendly Initiative	<p>RWHT Trust successfully met all the criteria required for Stage 2 assessment and the assessment team recommend to the Designation Committee</p> <p>Source UNICEF 2010</p>
Cervical Cancer	<p>Wolverhampton's rate of invasive cervical cancer has fallen dramatically since 2007</p> <p>Regional cervical screening quality assurance team's visit to the Trust 2010 rated the trust as Very Good/Excellent</p>
Cancer Services	<p>The Skin and Urology MDT's were externally peer reviewed in March 2010, and achieved excellent results. The Lung, Gynaecology, Urology, Head & Neck, Skin, Colorectal, Upper GI, Breast, Paediatric and Complimentary Therapy MDT's also underwent an internal peer review assessment in July 2010 which was ratified by the National Peer review team.</p>
Cardiac Services	<p>Patient Surveys independently verified showed that the overall impression of our services and the patient's pathway/experience appears to be very positive.</p> <p>Source: Black Country Cardiac and Stroke Network 2010</p>

Mortality Surveillance Process: Before and After

Established Mortality Review Process



In August 2010 the Director of Governance reviewed the mortality process that was in place and identified the following areas that required change.

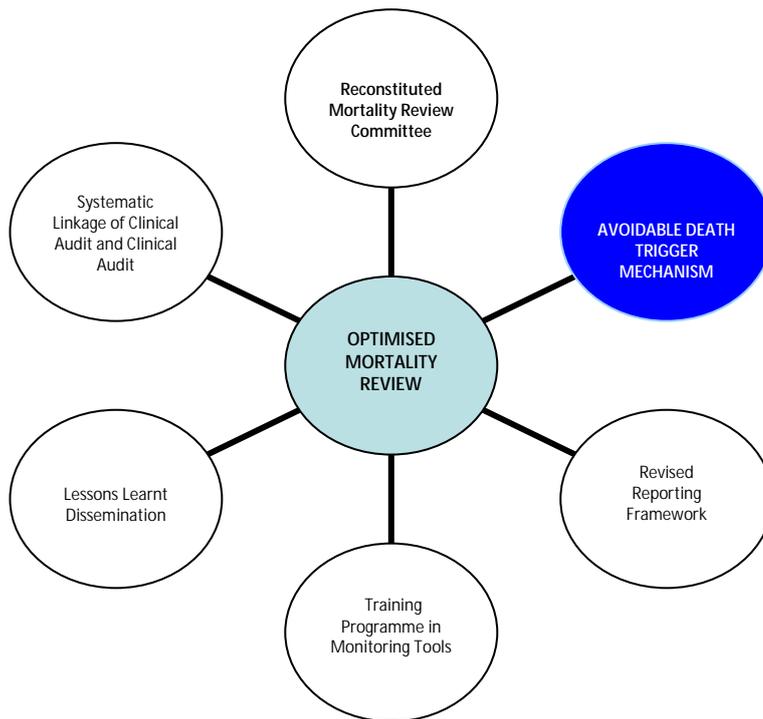
Over reliance on HSMR- Due to the face and construct validity of the measure there was a need to supplement HSMR data with other mortality data to provide an accurate picture of the quality of care provided by the trust.

Mortality Review Committee- The reviews produced low yield of problems from case note assessments. It was accepted that the committee needed to take steps to become an overview group which further harmonised trust wide mortality review processes. The information flow for mortality had placed constraints upon the investigative efforts of the group.

Information Flows- The flow of information from directorate level reviews required centralised co-ordination and dissemination of lessons learnt.

Quarterly Reports- Presented a narrow perspective of mortality relying solely on the HSMR. They were unable to look forward and anticipate CQC alerts.

Revised Mortality Review Process



Mortality Review Committee-In addition to senior clinical membership the group has now been augmented with personnel from senior management, information and other professional groups to ensure a more rounded approach. The trust mortality committee will take further responsibility for deriving organisational learning from multiple assessments of mortality based on local and national data. The mortality review committee will report to the Board Assurance Committee and Quality and Safety Committee.

Comprehensive Information Capture- An innovative unified pro-forma has been developed based on the Institute for Healthcare Improvement global trigger tool. This will identify if there are any clinical process issues, delays in treatments and link them with coding architecture (see appendix 1) .This new system of monthly structured evaluation on a trust wide basis should enable anticipation of alerts and offset often costly and ad hoc pieces of work needed to be undertaken.

Training and Development- After consultation with clinical leaders at different levels of the organisation, it is clear that there needs to be a greater appreciation of mortality assessment tools and the determinant factors of methodologies such SHMI, HSMR, SMR and RAMI. A training programme has been initiated which will cover Clinical Directors and Directorate Managers. Once this is done directorates can nominate key individuals to become local champions and ensure local monitoring is comprehensive and continual.

RWHT Trigger Tool and RCA – The Trust’s Director of governance is developing the trust’s own mortality trigger tool which will seek to identify clinical process failures. If a set of conditions are met, these will be classed as avoidable deaths and a full RCA will ensue for each case.

Checklist for Board Assurance

Surveillance Recommendations	RWHT	Evidence
Not blaming Coding, looking at clinical process	ü	This paper demonstrates a holistic approach to Mortality Surveillance.
Developing an internal trigger tool to identify avoidable deaths and moving to RCAs	ü	To be completed by 01 April 2011
Monitor regularly – monthly, bi-monthly	ü	Established under the Mortality Review Committee.
Report to the board quarterly	ü	Board Assurance Committee and QSSC
Form or use existing regular reporting groups such as mortality and morbidity meetings and	ü	Mortality Project Team Mortality Review Committee Directorate Level Meetings
Patient safety committees which normally include external delegates including PCTs	ü	Mortality Information is regularly shared with commissioners and views are pro-actively sought. The Director of Public Health at NHS Wolverhampton has attended meetings.
Flag and audit every in-hospital death to directorates	ü	The Mortality Review Committee provides systematic feedback at a directorate level each month based on individual spell data.
Investigate each alert in an open and transparent way	ü	All alerts are clinically led and follow clear governance arrangements.
Involving clinicians in any investigation i.e. at mortality and morbidity meetings	ü	All alerts are clinically led and follow clear governance arrangements.
Be open with commissioners and the SHA/Monitor through the formation or use of your patient safety committee	ü	Mortality Information is regularly shared with commissioners and views are pro-actively sought.
Use Real-Time Monitoring tools to feedback to directorates	ü	The trust uses all available monitoring tools.
Procedural and diagnostic SMRs	ü	Procedural and diagnostic SMRs are populated on a monthly dashboard and reviewed at the Mortality Review Committee.

Conclusion

It is hoped that this paper provides assurance that RWHT has a thorough understanding of its mortality performance and the determinant factors of HSMR.

That the trust stance on mortality surveillance is one of **total vigilance** and includes looking at clinical processes, coding architecture and following evidence based improvement strategies. We are not attributing the high HSMR to just coding but rather openly investigating all avenues of enquiry.

The following key points are to be noted.

1. Based on analysis on Dr Foster Tools the “expected number of deaths” at RWHT as assigned by Dr Foster is not reflective of casemix and is considerably out of step with other large West Midlands Providers. If this is adjusted in line with peer group levels the trust’s HSMR is comfortably below the national average.
2. The observed death rate per total care spells provided in 2009/10 and 2010-11 at RWHT is below peer group levels in the West Midlands.
3. The trust is systematically working with Dr Foster to correct coding anomalies to enable accurate casemix adjustment, 2010/11 administrative SUS data will be resubmitted to enable more accurate capture of Charlson co-morbidity.
4. The trust has risk assessed its mortality surveillance process and is taking a total vigilance approach to monitoring mortality, actively encouraging greater coordination between the clinical and coding processes.
5. The trust is following best practice principles in mortality surveillance set out by Dr Foster, the Department of Health and the Royal Society of Medicine (J R Soc Med 2006; 99; 303-308).

Appendix 1

Patient Characteristics	
1	Name _____
2	Unit No
3	Age
4	Sex
5	Source of Admission
6	Emergency or Elective
7	Clinical Diagnosis (es) on Admission
8	Clinical diagnosis (es) on Death or Discharge
8a	Do you agree with these diagnoses _____ If not why not
9	Length of Admission in total
10	Abnormal Investigations
10a	Haematology
10b	Biochemistry
10c	Radiology
10d	Microbiology
10e	Others
11	Was the treatment provided appropriate?
12	Were there any clinical errors, omissions, process problems that hindered the process of gaining good quality care

Patient Characteristics

13 Were there identifiable clinical risks/incidents?

14 Were there any of the clinical risks/incidents due to

14a Delay in Diagnosis

14b Delay in Treatment

14c Medical Clinical Errors

14d Nursing Clinical Errors

14e Medication Errors

14f Process Errors

15 Please give further details below

16 Was the patient on a Liverpool care pathway?

17 Was the patient seen by the palliative care team?

18 What were the entries on the death certificate as cause of death and contributing factors?

19 Who completed the death certificate? (grade only)

20 If not the consultant in charge does he or she agree with the facts on the death certificate?

