University Hospitals of Morecambe Bay (UHMB) NHS Foundation Trust Mortality review

Initial findings and recommendations

January 2012
Contents

Summary 3
Mortality review 3
Key findings 5
Understanding mortality rates at UHMB 6
Recommendations 9

Appendices
Appendix A: Roles of people interviewed and review team
Appendix B: Summary of analysis
Appendix C: About AQuA
Appendix D: AQuA Reducing Mortality Collaborative Driver Diagram
Summary

University Hospital Morecambe Bay NHS Foundation Trust invited AQuA to work with them to conduct an initial independent review of mortality rates at the Trust.

It was planned that the work will be undertaken in three phases. This report covers the first phase of the work which looked at understanding the reasons behind the Trust’s relatively high levels of mortality.

The report concludes that the characteristics of the local population, deprivation, data quality and co-morbidities do not appear significant drivers of high rates of mortality at UHMB. In addition whilst, the historic low level of palliative coding is likely to have had an adverse impact this by itself does not entirely explain the Trust’s high mortality rates.

We recommend that the Trust:

- Pays greater attention to the recording of diagnoses as this will significantly influence the calculation of expected mortality rates.
- Should strengthen its arrangements in relation to mortality including the development of a mortality reduction strategy and action plan.
- Should ensure high levels of clinical engagement and ownership.
- Should investigate the level of clinical quality and staffing levels in areas with high levels of expected and actual mortality and consider a care bundle approach to tackling these.

In the second phase AQuA will work with UHMB to support the development of a mortality reduction strategy. In the third phase AQUA will support the Trust in the implementation of the strategy and action plan that will accompany it.

Mortality review

UHMB is a large complex teaching hospital. It employs 3,737 non medical & 428 medical and dental (FTE 2010) staff that work across five sites to deliver a comprehensive range of healthcare services to the population of 320,000 who live in the North Lancashire and South Cumbria area.

AQuA was commissioned to undertake a review of the mortality rates at UHMB in order that the Trust Board could better understand the disparity between the expected rates calculated by the SHMI, RAMI and HMSR methodologies and the actual number of deaths. The review, undertaken between December 2011 and February 2012 included desk based research, structured interviews with a range of UHMB employees and representative from key stakeholder organisations and quantitative analysis the Trust’s data. A list of the range of roles interviewed and the details of the review team can be found in Appendix A and the summary of the analysis in Appendix B. Further information about AQuA is provided in Appendix C.

The review has been undertaken alongside a range of difficult issues being tackled within the Trust. During the summer of 2011 UHMB experienced high profile media attention due to a number of maternal deaths.
The Care Quality Commission was called in to review the Trust’s maternity services in September 2011 and Monitor increased the Trust’s Governance risk rating to red. In parallel Monitor announced that there were significant breaches of the terms of authorisation. Monitor used its formal powers of intervention to require action citing the following as areas where its terms of authorisation had been breached:

- Exercising functions effectively, efficiently and economically.
- Governance.
- Healthcare and other standards.

Other important contextual information includes

- The Trust recognises the need to place quality at the heart of all it does and takes positive action to deliver this on the ground. The Trust Board reports, including the depth of clinical reporting through the Trust’s local reporting systems, coupled with the Board’s aims and objectives provide further evidence of this. Furthermore, since summer 2011 UHMB have embarked on moving their quality and safety agenda forward and the Trust has in place a Quality Strategy for 2010 – 2013 which is providing them with a platform for the development of a coherent and comprehensive quality improvement programme.
- The Trust is led and managed by a team of experienced and well respected NHS professionals.
- The Trust has appropriate relationships with its main commissioning PCT which is neither too cosy nor too challenging.
- The Trust is currently the subject of a number of investigations relating to the Trust’s maternity services and is working with the local PCTs, NHS North, CQC and the, Nursing and Midwifery Council to develop and deliver action to address their findings. Clinicians from Central Manchester NHSFT are also part of the review process. A number of actions have already been implemented which include: unannounced inspections; the implementation of a new on-line risk management system; the development of a new partnership with Liverpool Women’s Hospital; the recruitment of 11.4 FTE midwives; the appointed a new clinical lead for obstetrics and gynaecology across all sites; the appointed a new Consultant Obstetrician and Gynaecologist with considerable experience in governance and the appointed a new Consultant Paediatrician.
- Along with 2 other hospitals the Trust undertook to pilot Lorenzo, an integrated care management system promoted by Connecting for Health as a possible solution to the problems encountered in the roll out of the national NPFT programme.
- Although their performance is variable the Trust has a relatively good track record of delivery across most indicators relating to quality. However, there are also a range of softer indicators – highlighted by Sir Robert Francis in the on-going public inquiry into the findings at the Mid Staffordshire NHSFT – that can help provide a more holistic picture of life in the Trust. Although data timeliness is an issue here taken in the round the fact that indicators such as written complaints, cancelled operations, A&E waits are high and not significantly improving may be indicative of the stress that the system currently faces.
- Involvement in the acquisition process for their neighbouring Trust, North Cumbria Acute, and the impact that final decisions may have also added to the complexity of the current situation.
Key findings

Therefore within this context our findings are:

- The number of in-hospital deaths has steadily decreased over the last 5 years whilst the expected (calculated) rate has hardly changed. The fact that crude mortality has fallen during a period when emergency and elective admissions have risen suggests that neither the demographic profile nor the geographic distributed nature of the population and the services that are required to support them have any bearing on the death rates. Similarly, other structural components of the population such as the presence of the only Youth Offenders Institution in the North West, the on-going expansion of the University of Lancaster, rural deprivation and an influx of summer visitors do not offer an adequate explanation. (Findings 1 - 4).

- The issues that the Trust have encountered with regard to Lorenzo are widely documented elsewhere and in AQuA’s view although this had a short term impact on the Trust’s ability to code and count activity it is not a reasonable explanation for the disparity between the actual and expected mortality rates over the last five years (Finding 5).

- That co-morbidities appear to be relatively similar to those of the organisations peers and historically any shifts in the case mix are also seen in all other providers suggesting that these are a function of whole scale system changes such as the introduction of HRG 4.0 rather than a function of changes that UHMB have created in their approach to coding and counting (Finding 6).

- UHMB had one of the lowest levels of palliative care coding in the Country and this has undoubtedly affected the mortality rate (Finding 7).

- There is an apparent relationship between standardised mortality rates and the provider workforce establishment levels i.e. Doctors and/or nurses per bed. UHMB appear to be below national and SHA average staffing levels and this warrants further investigation. The recent recruitment of additional doctors and nurses into children and women’s services will, in part address this but it links to a wider set of mortality relevant issues such as the number of medical outliers (Finding 8).

- It is likely that the way in which deaths are written up in the patients notes and how that is then interpreted in the codes that are used to categorise the causes of death are a key factor in explaining the variance between the actual and the expected death rates. This is not about adherence to the Data Dictionary or about the competency of the coders – all the indicators we have looked at suggest that data quality per se is good – but it more about the accuracy of the raw material (i.e. the notes) that the coders subsequently interpret. Associated with this is a theme from staff interviews about their concerns about governance and clinical engagement.

- Whilst the Trust is involved in a wide range of quality improvement initiatives more could be done to ensure that these are better aligned and that they support a concerted drive to reduce mortality rates (Finding 9-12).

In the following section we have set out our evidence for each of our findings and more detailed recommendations for each that flow from them. However, first we have provided some contextual information relating to the calculation of mortality rates at UHMB.
Understanding mortality rates at UHMB

Calculating mortality rates

As a result of the findings of the initial review into standards of patient care at the Mid Staffordshire NHSFT the Government commissioned a review of the methodologies used to calculate in-hospital mortality rates. The view of the review panel and the Francis review that went before it, was that having a variety of different ways to calculate the expected mortality rate was confusing to the healthcare profession and confusing to the public and had added to the delays in identifying the scale of the problems that were being encountered at the Mid Staffordshire NHSFT.

As a result, in November 2010 the Department of Health made public its review. The new methodology, called the Standardised Hospital Mortality Index (SHMI), was published in October 2011 by the NHS Information Centre for Health and Social Care (NHSIC). The SHMI reports standardised mortality accounting for all deaths in hospital as well as those that occur within 30 days of discharge. It differs from alternative measures, including Dr Foster’s Hospital Standardised Mortality Rate (HSMR) and CHKS’s Risk Adjusted Mortality Index (RAMI).

However, these differences relate to statistical nuances rather than major substance. At their heart the SHMI, the RAMI and the HSMR offer a view on how actual rates of mortality compare to a statistical view of mortality which adjusts for a range of factors including age, gender and case mix. How the death is written up in the patients notes and how that is then interpreted in the codes that are used categorise the causes of death underpins all of this and, although we need to undertake further more detailed work, our current view is that this will go some considerable way to explaining the variance between the actual and the expected death rates.

Number of deaths, death rates and causes of deaths

AQuA’s analysis shows that:

- In 2010/11 the SHMI showed 2,050 observed deaths in or within 30 days of discharge at UHMB.
- In the same period crude mortality for spells for ordinary admissions of 2.9%. However, it remains higher than the National average and consequently an on-going concern (Figure 1).
- The April 2010 – March 2011 SHMI showed UHMB to have a mortality rate of 1.14, 14% above the England average and the 134th highest mortality rate of the 147 Trusts reviewed. A recent refresh of the SHMI for July 2010 – June 2011 shows UHMB as having a SHMI of 1.13, a decrease of 0.3% and improving their National ranking one place to the 133rd highest mortality rate (Figure 2).
- It is apparent that UHMB’s crude mortality is falling (Figure 3). Although limited trend analysis can be conducted on the SHMI, the RAMI shows a reduction over time. However UHMB had the highest RAMI in the Country for 2010/11 (Figures 4a & 4b).
- Figure 5 summarises numbers of deaths in the Trust in 2010/11 by primary diagnosis chapter. It shows that during 2010/11 6 primary diagnosis chapters covered 84.8% of deaths, with over 90% covered by 8. (Figure 6a & 6b).
Figure 1: Crude death rates – 2010/11

Figure 2: SHMI. April 2010 - March 2011

Figure 3: Discharges and crude death rates

Figure 4a: RAMI for Acute providers 2012/11

Figure 4b: Change in RAMI over time
Primary Diagnosis Chapter | Deaths | Cumulative%
--- | --- | ---
Diseases of the circulatory system | 402 | 25.3%
Diseases of the respiratory system | 366 | 48.4%
Neoplasms | 214 | 61.9%
Diseases of the digestive system | 161 | 72.0%
Injury, poisoning and certain other consequences of external causes | 104 | 78.6%
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | 99 | 84.8%
Diseases of the genitourinary system | 80 | 89.9%
Certain infectious and parasitic diseases | 41 | 92.4%

Source: Hospital Episode Statistics, 2010/11

Figure 5: Causes of death

Source: Hospital Episode Statistics, 2010/11
Figure 6a: Causes of death

Source: The Information Centre (July 2010 – June 2011)

Figure 6b: Differences between observed and expected deaths by diagnosis group
## Recommendations

This section sets out our findings in more detail and recommends areas for further improvement. We have organised the output from our review into twelve findings. Each finding is accompanied by a commentary, the progress the Trust is currently making and the recommendations for further work.

### Finding 1: CRUDE RATES DO NOT APPEAR TO DIFFER BY SITE

<table>
<thead>
<tr>
<th>Commentary:</th>
<th>Crude death rates for ordinary admission spells appear similar for UHMB’s two main sites (Figure 7).</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Crude Death Rate by Site and Year" /></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7:** Source: Hospital Episode Statistics, 2010/11

Westmorland no longer offers non-elective care, and elective mortality rates are not the same level of concern as non-elective when assessed on the basis of standardised mortality rates.

Feedback from interviews suggested Lancaster was potentially more at risk than Furness. Concerns were raised regarding Furness’s rurality and ability to manage certain types of patient. However, the analysis does not appear to support these views.

**Progress:** To be confirmed.

**Recommendation:** Maintain awareness and review of deaths by site:

Whilst death rates appear similar by site it is important to maintain awareness and monitor these on a regular basis. If CHKS’s Insight tool provides RAMI by site then UHMB will have the means and a more statistically appropriate measurement of its RAMI.
Finding 2: CRUDE RATES DO NOT APPEAR TO DIFFER BY GEOGRAPHY

Commentary: 99% of UHMB’s activity is provided for patients from Cumbria and North Lancashire Primary Care Trusts. However, UHMB covers a wide geographic area across the North West from the Lake District to the coast. Consequently, it may have high transient populations visiting for holidays and similar.

From this it could be considered that high mortality may be driven by non-catchment population. However, on the basis of crude mortality for ordinary admission spells it appears mortality is relatively similar for both main PCTs and lower for patients receiving care from other areas of the country (Figure 8).

![Crude Death Rate by PCT](image)

<table>
<thead>
<tr>
<th>Health Economy</th>
<th>Spells</th>
<th>Deaths</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMBRIA PCT</td>
<td>28528</td>
<td>880</td>
<td>3.1%</td>
</tr>
<tr>
<td>NORTH LANCS PCT</td>
<td>22063</td>
<td>654</td>
<td>3.0%</td>
</tr>
<tr>
<td>Other PCTs</td>
<td>4348</td>
<td>61</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

**Figure 8**: Source: Hospital Episode Statistics, 2010/11

Recommendation Consider non catchment population alongside local health economy:

Whilst information suggests mortality is higher in the Trust’s local catchment population, it provides care for many patients from other parts of the country. Consequently, it may be of benefit to consider the apparent needs of these patients such as reasons for admission, reasons for death and similar.

Finding 3: DEPRIVATION DOES NOT APPEAR A DRIVER

Commentary: It is often assumed that deprivation contributes to higher mortality rates. However, the SHMI does not adjust for this. There appears no relationship between a Trust’s SHMI and its deprivation (based on Trust mapped to Local Authority deprivation index).
It has been found that adjustment for socio-economic factors has little effect on HSMRs and this may be because adjustments for the case-mix of the HSMR diagnoses takes account of the social factors - in effect the diagnostic mix acts as a proxy for those factors. Some of the lowest HSMR trusts are in deprived inner city areas*.

*Courtesy of Professor Brian Jarmen

**Progress:** To be confirmed. The SHMI is a new indicator.

**Recommendation:** Maintain awareness and review of deaths in and outside of hospital:

Whilst deaths within 30 days of discharge are comparable to the National average, it is important not to lose sight of this aspect of mortality. The Trust should monitor deaths within 30 days of discharge and take appropriate action if, and where, avoidable deaths occur.

**Finding 4:** GPs PER HEAD OF POPULATION APPEAR SIMILAR, IF NOT HIGHER, THAN AVERAGE

**Commentary**

UHMB predominantly serves a catchment population from Cumbria Teaching and North Lancashire Teaching Primary Care Trusts, 99% of its activity coming from these health economies².

Numbers of General Practitioners per head of population are associated with mortality rates.

As can be seen in Figure 10, Cumbria Teaching has higher than National average FTE GPs per 10,000 registered patients, North Lancashire has similar to average, and combined they are higher than average.

---

² HES, All Inpatients October 2010 to September 2011
Finding 5: THE INTRODUCTION OF LORENZO HAD A SHORT TERM RATHER THAN A LONG TERM IMPACT

Commentary: From interviews, it appears a common assumption in the Trust that data quality and the Lorenzo implementation are the potential drivers for high standardised mortality rates. In response to this Dr Foster Good Hospital Guide the Trust said:

“… Lorenzo is not a system issue but mainly due to difficulties in managing records during the changeover period that impacted on the robustness of coding…”

However, looking at SUS submissions from April 2008/9 to August 2011/12 it is apparent:

- Volumes of SUS records submitted have been relatively consistent since April 2008/9, and within SPC confidence limits.
- Whilst there was a dip in % SUS records with a valid diagnosis during transition to Lorenzo this has recovered.
- Levels of valid diagnosis codes have remained over 98.5% throughout the time period reviewed.
Additionally, a report by CHKS suggests

“Insight suggests that the data quality index is good compared to the selected peer. The levels of non specific coding and signs and symptoms are comparative, as is the depth of coding. However, although the Trust is not recording signs and symptoms as a primary diagnosis at a higher rate than the peer it is important to ensure that the order of coding is correct and that the primary diagnosis is definitive and reflective of the patient’s condition as this does affect the attribution to HRGs”

This does not detract from the significant challenges Lorenzo will have posed for the Trust. However, data quality would not appear a significant driver for UHMB’s relatively high mortality rates.

**Progress:** To be confirmed.

**Recommendation:**

**Lorenzo implementation:**

The Trust appears to have relatively robust data quality and is implementing new initiatives to further improve this:

- Lorenzo is still to be fully implemented in all departments, continued roll out will contribute to further improvements.
- There is now an automated message to Consultants when a patient dies to raise awareness and make the link with coding.
- There is improved clinical engagement with coding following some work with CHKS.

However, for all organisations data quality is, and will remain, an ongoing concern and therefore it is important continued focus and effort is made to maintain and improve data quality.

**Finding 6:** CO-MORBIDITIES APPEAR SIMILAR TO NATIONAL AVERAGE

**Commentary:** Following on from and related to data quality many organisations believe that levels of co-morbidities contribute to high or low mortality rates. It is true that under recording of co-morbidities can result in an artificially high standardised mortality rate.
However UHMB appear to have similar to average levels of co-morbidities and so this may be less of an issue than for some other Trusts.

![Average diagnoses codes per spell 2010/11](image)

**Figure 13:** Source: Hospital Episode Statistics, 2010/11

**Progress:**
The Trust has already implemented a review of mortality coding by CHKS.

**Recommendation:**

**Consider CHKS Mortality coding report recommendations:**

UHMB should review how effective the implementation of CHKS’s recommendations from their mortality coding report has been. The report found “evidence that clinicians do not understand the clinical coding process and conventions in use. The Trust would gain richer and more accurate coding if there was a greater liaison and understanding by clinicians. This would have a beneficial effect on HRG grouping, Payment by Results and mortality data.”

The recommendations made were:

- The Trust is recommended to provide or commission some clinical coding awareness training for clinicians to raise awareness of the information the coder needs to capture. It would be useful if the clinicians were aware of the Connecting for Health guidance the clinical coders have to work to on the definition of the primary diagnosis as mandated April 1997 to encourage them to remove the judgemental aspect from the clinical coder.
- There needs to be a systematic method of recording the full diagnosis and relevant co-morbidities by the most appropriate medical practitioner at least once during the patient’s finished consultant episode (FCE) of care. Bearing in mind that clinical coding is for morbidity and not mortality as this will impact upon the sequencing of conditions. Without a final summary with the clinicians detailing the ‘main condition treated or investigated’ for each FCE, the clinical coder will continue to trawl through all the documentation and select the primary diagnosis and secondary conditions, which means the coding is open to individual interpretation.
The Trust should consider introducing a mortality monitoring process whereby the deaths are reviewed by discharging clinician’s peers and that clinical coding for deceased patients is jointly signed off by the clinician and the coder. This will support a beneficial engagement process between the clinician and coding staff and will also assist in providing on-going clinical governance assurance to the board.

Clinical coders should be familiarised with Connecting for Health recommendations on the recording of co-morbidities and secondary diagnosis.

Coders should ensure where patients are under the care of the palliative care team or on the Liverpool Care Pathway this should be recorded in line with the guidance given in the coding clinic of March 2007 in respect of palliative care and the coding clinic of June 2010 in respect of end of life care.

Finding 7:

PALLIATIVE CARE CODING HAS BEEN BELOW AVERAGE BUT HAS INCREASED IN RECENT MONTHS

Commentary:

The SHMI does not account for patients who have any coding associated with palliative care, this being either under the care of a palliative care consultant (specialty code 315) or with a diagnoses related to palliative care (ICD10 codes Z51.5 and Z51.8). The HSMR includes, and the RAMI excludes, palliative care.

UHMB appear to have one of the lowest levels of deaths with palliative care coding in the country. Figure 14 shows UHMB as having the 138th lowest level of recording of the 147 Trusts with a SHMI.

Figure 14: Source: NHSIC, supporting statistics to SHMI

However, levels of coding appear to be increasing. Figure 15 below shows UHMB levels of palliative care coded deaths from quarter 2, 2004 to quarter 1, 2011.
It is also worthy of note that there appears no statistical relationship between palliative care coding and an organisation’s SHMI. UHMB position is shown in Figure 16 below and is highlighted in red.

UHMB slightly under-code their percentage of deaths coded as palliative care compared with England as a whole, if they were at the England value it might reduce their HSMR number by about 2% (courtesy of Brain Jarman).

**Progress:**

The Trust has implemented a review of mortality coding supported by CHKS.

Feedback from interviews highlighted initiatives are in place to improve coding of palliative care, for example implementation of use of a stamp to highlight palliative care on the patient record.
Recommendation

Consider CHKS palliative coding report recommendations:

CHKS’s report recommended: “The trust is recommended to review the documentation process for any patients receiving palliative care.”

Consider learning from others:

Levels of palliative care coding vary considerably across England and the North West. UHMB may be able to identify additional approaches to coding from other Trusts, for example Salford Royal Foundation Trust has a high level of coding.

Finding 8:

STAFFING LEVELS APPEAR BELOW AVERAGE

Commentary:

There is a statistical relationship between a Trust’s establishment, i.e. Doctor and Nurse coverage per bed and its mortality rate.

Our analysis of Hospital and Community staff data (HCHS) data suggests that UHMB have below average establishment for both Doctors and Nurses per bed. In 2010/11 UHMB had c0.59 Doctors per bed, and c1.81 nurses per bed, compared to a National average of c0.8 Doctors and c2.01 Nurses per bed.

Figure 17: Source: 1. NHSIC, HCHS workforce returns. 2. Department of Health, KH03 bed returns

Analysis of only large acute Trust peers provides a similar position:

Figure 18: Source: 1. NHSIC, HCHS workforce returns. 2. Department of Health, KH03 bed returns
However, UHMB establishment has been increasing since 2008/9, but it is still considerably below the National average.

Feedback from interviews also raised establishment as a main concern, as well as specifics related to this, for example concerns over medical cover during out of hours and over the weekend.

From interviews, it appears medical outliers are a concern. Information is limited, of low quality and available only for a small number of providers, but data on medical outliers appears to support this concern. Figures 19 and 20 shows the average number and average percentage of patients who are medical outliers in UHMB compared to other North West Trusts.

Progress:
Staffing levels in Women and Children’s services have recently been increased.
Other progress to be confirmed.

Recommendation:
Consider Doctor and Nurse coverage per bed:
UHMB appear to have lower than national or peer average establishment per bed. Concerns were also raised via interviews. A review of coverage, including weekends and out of hours should be undertaken focusing on those areas where this is the biggest gap between observed and expected mortality.
**Workforce planning:**
Alongside this the Trust needs to ensure that organisation wide workforce planning acknowledges any findings and identified risks.

**Consider current bed management arrangements:**
Medical outliers appear a risk, and when considered alongside lower than average establishment may be contributing to higher levels of risk to patients. Consequently, some consideration of existing bed management would add benefit and reduce risk. This needs doing across sites and should potentially link to recommendations set out above.

<table>
<thead>
<tr>
<th>Finding 9:</th>
<th>DATA QUALITY APPEARS RELATIVELY CONSISTENT BUT MASKS WIDER ISSUES RELATING TO RECORDING AND GOVERNANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commentary:</strong></td>
<td>Findings 5, 6 and 7 relate to aspects of data quality in some form. Finding 5 suggests high level data quality is relatively consistent, finding 6 shows similar to average levels of co-morbidity, finding 7 suggests low levels of palliative care coding. However, these are discrete aspects of data and need to be understood in wider context. Feedback from interviews suggested variable awareness and use of information by services and staff. For all organisations data quality is, and will remain, an ongoing concern and therefore it is important continued focus and effort is made to maintain and improve data quality.</td>
</tr>
<tr>
<td><strong>Progress:</strong></td>
<td>The Trust have implemented some actions, for example a palliative care coding stamp. However, there is more that could be done.</td>
</tr>
<tr>
<td><strong>Recommendation:</strong></td>
<td>Audit: If not already done, the Trust should consider regular audits of data quality. Similarly, it should consider regular audits of compliance with data quality procedures. Consistency of audits would help. On a clinical level interviews highlighted that Early warning score (EWS) audits were carried out however it was not clear how often and that some audits are done on Observation charts, but not all, and again it was not clear how often this is done and at what level. <strong>Data Quality Strategy and Policy:</strong> If the Trust does not have a Data Quality Strategy it should consider developing one making reference to significance of good data quality, enforcing link with other Trust strategies and policies. If the Trust does not have a Data Quality policy and procedures linked to a data quality strategy it should consider developing them. If it does, it should consider including reference to specifics regarding mortality information and coding if not already there.</td>
</tr>
</tbody>
</table>
### Awareness and ownership:
Feedback from interviews showed variable awareness of information. It is important that there is clinical ownership of data. Improved awareness may be facilitated by wider publication of information, targeted reporting where issues may exist, running training and awareness sessions.

Greater awareness, provision and use of information will contribute to improving data quality.

### Order of coding:
From CHKS’s report: “it is important to ensure that the order of coding is correct and that the primary diagnosis is definitive and reflective of the patient’s condition as this does affect the attribution to HRGs”.

### Finding 10: GOVERNANCE ARRANGEMENTS FOR MORTALITY SHOULD BE STRENGTHENED

#### Commentary:
From pre interview information and the interviews it appears:
- There are no strategic action plans in place to address the reduction of mortality other than addressing coding.
- Limited information is received and discussed at the Board in relation to mortality.
- There is no reference to mortality in the Trust’s Quality Strategy.

#### Progress:
The Trust is making progress in addressing some of these issues:
- A recent restructure of their management team as well as a number of initiatives to improve clinical engagement.
- Commissioning Price Waterhouse Coopers to undertake a review of governance structures.
- Initiating a range of projects to tackle aspects of mortality and patient safety.

#### Recommendation:
**Governance review:**
It is understood Price Waterhouse Copper have been commissioned to review the Trust’s governance arrangements. It is important that findings and recommendations of this are implemented where appropriate with clear reference to the need for a greater focus on mortality issues.

**Board development:**
We would encourage UHMB to review its current Board meeting structure in relation to quality and patient safety to ensure it is high on the agenda and having mortality as a standing item.

The Board should also consider a Board Development Programme in relation to quality. An example of a suitable intervention is AQuA’s “Boards on Board programme”. This 2 day programme offers all Board members support to focus on quality and patient safety and provide a platform for continued cross organisational learning, improving skills and confidence to enhance quality improvement.
<table>
<thead>
<tr>
<th><strong>Project and programme alignment:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Trust should also consider how to better align initiatives and programmes. The review found that the organisation has plenty of good ideas and intentions but is not always consistent with strategic follow through.</td>
</tr>
</tbody>
</table>

**Consider other recommendations made in this report, and those from other reports:**

Whilst mortality is falling, it still remains above the England average. Progress has been made, however, there is still potential to make further improvement. The Trust Board should consider the recommendations in this report, and those from other reviewers to move forward in reducing mortality rates.

**Finding 11: CLINICAL ENGAGEMENT**

**Commentary:**

From interviews it appears there is wide variation in awareness and use of information in the Trust. The Trust has the GURU system and many staff have access to CHKS’s Insight tool. However, whilst this information is there people seem to use only part of it and it was not routine.

It was acknowledged there is a lot of data shared but it is not sufficiently well presented as information or alongside any narrative to be able to contextualise data.

Although clinicians are aware of information on causes of deaths we could only find limited evidence of a systematic and multi-disciplinary approach being employed to review deaths, especially unexpected ones.

**Progress:**

It is evident that there are examples of good practice, clinical engagement and understanding of mortality data e.g. participation in the Rapid Spread pilot however more work is needed to join this work up and engage more widely with clinicians of all specialities and roles.

**Recommendation:**

Consider using multi-disciplinary teams to review all deaths, especially unexpected ones, and to assess the root causes:

The Trust may benefit from introducing a multi-disciplinary review of all deaths, especially unexpected ones. This should be backed up with a robust root cause analysis with the findings shared across the clinical community. A marker of success would be a reduction in the repetition of the same type of incident.

Consider raising awareness of information availability and use of it to inform discussion:

There is benefit in greater awareness and use of information. This should be clinically owned where appropriate. Information should be used in informing discussions and helping develop local action plans to reduce mortality. Clinicians and service managers should endeavour to assess information and potential issues that could impact mortality in their respective departments on a routine basis.
<table>
<thead>
<tr>
<th>Consider wider factors in holistic overview of patient safety and mortality:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality rates are potentially driven by many factors. UHMB has high levels of incident reporting relative to peers, and of these low levels resulting in death. The Trust should consider incident reporting alongside other sources of information including complaints and litigation cases when assessing their patient safety and mortality.</td>
</tr>
</tbody>
</table>

### Finding 12: CLINICAL QUALITY AND CARE BUNDLES

### Commentary:
It is evident that the Trust has undertaken mortality reviews. However, these are at a high level and the Trust needs to do more to drill down into issues and factors especially where there are a large number of unexplained deaths.

### Progress:
UHMB have previously been involved in the Advancing Quality programme, this is currently being re-ignited supported by AQuA to ensure it is fully embedded across the organisation.

### Recommendation:
**Develop a mortality action plan:**
UHMB should develop a mortality action plan that is owned both at Board and Operational level. This should highlight the organisations aims in relation to mortality, consider the drivers considered to influence and impact mortality, outline specific actions against each driver with clearly defined timescales and responsibilities and include a plan for raising awareness across the organisation. The driver diagram, developed as part of AQuA's reducing mortality collaborative is provided at Appendix D. UHMB may find both the approach used to develop the driver diagram and the finished product a useful framework to support improvements in mortality rates.

**Review and refresh the Trust's Quality Strategy:**
Review and where appropriate refresh the Trust's Quality Strategy, making reference to mortality, cross referencing with the proposed mortality reduction plan.

**Consider extending the care bundle approach already used in the Advancing Quality Programme into other areas, including end of life care:**
Well-developed care bundles exist in many areas and clinical teams across the Trust have previously used them in a number of strands of the Advancing Quality programme. UHMB should consider extending the use of care bundles into other areas, including end of life care and effective rapid discharge processes. At its simplest, a Clinical Bundle is a list of evidence pertaining to a particular condition. From a more advanced perspective, a Clinical Bundle describes the outcomes of a complex process that the health care system must bring to bear for each patient with a particular condition. The process of implementing and then auditing a bundle provides a consistent and evidence based approach to improvement.
Consider demonstrating compliance through implement an rigorous and regular audit process

If not already done, the Trust should consider regular audits of all quality improvements, in particular those relating to reducing avoidable mortality.

Consistency of audits would help. On a clinical level interviews highlighted that Early warning score (EWS) audits were carried out. However it was not clear how often and that some audits are done on Observation charts, but not all, and again it was not clear how often this is done and at what level.
Appendix A: Roles of people interviewed and review team

Roles of people interviewed
Cancer Lead Nurse
Divisional Senior Nurse
Director of Nursing
Clinical Medical Lead
Governance Manager
Head of Information
Assistant Director of Operations
Head of Governance
AMD
Non Executive Director
Clinical Quality and Safety Committee Chair
Clinical Audit Manager
Medical Director
Coding Manager

Review team
Dr Jackie Bene, Medical Director, Royal Bolton NHS Foundation Trust
Maria Sinfield, Associate Director of Professional Standards and Patient experience, Royal Bolton NHS Foundation Trust
Jason Pickles, Head of Business Intelligence, Advancing Quality Alliance
Rachel Dennis, Programme Manager, Advancing Quality Alliance
Appendix B: Summary of analysis

The initial phase, Phase 1, of AQuA’s review of mortality rates at UHMB has looked at:

- Analysis of key indicators
- Assessment of how clinical care is provided, evidenced and documented including care bundles and patient pathways
- Assessment of the provision of End of Life Care provided by and associated with the Trust
- Assessment of the quality and accuracy of coding and documentation, and quality systems in the organisation to support this
- Assessment of how the organisation’s leadership manages quality and safety; information and systems for receiving and acting upon issues, strategic linkages of projects and programmes in the organisation, whether the Trust has due regard to quality
Appendix C: About AQuA

The Advancing Quality Alliance (AQuA) is the North West of England’s health care quality improvement organisation.

Formed in recognition that improvement has to be led from the front-line rather than be centrally imposed, AQuA’s aim is to accelerate the pace of improvement and to help good practice to spread rapidly.

The ethos of AQuA is to stimulate, share and support improvements and innovations in the quality of services delivered to patients and their families. With knowledge transfer at its heart their aim is to accelerate the pace of improvement and help good practice to spread everywhere rapidly.

AQuA operates on a not-for-profit basis and is funded by subscriptions from the NHS healthcare organisations in the North West of England. Their business brings together four complementary functions:

- **AQuA Observatory.** The aim of the AQuA Observatory is to provide sources of intelligence to stimulate innovation and support delivery.
- **AQuA Academy.** The aim of AQuA Academy is to build capacity and capability across the AQuA membership in improvement methods and in change management.
- **AQuA Action.** The aim of AQuA Action is to spread of best practice and opportunities for collaborative learning across organisations and across sectors.
- **AQuA Partnerships.** The aim of AQuA Partnerships is to provide the membership with a direct link to the best UK and international expertise.

AQuA’s work has already led to quantified quality improvements across the North West of England. For instance, our flagship programme, Advancing Quality, has driven up standards of care in five hospital based conditions. The five clinical areas are: acute myocardial infarction; coronary artery bypass grafts; heart failure; hip and knee replacement and community acquired pneumonia. It has now been extended to encompass stroke, psychosis and dementia and more clinical areas will be introduced in the future.

Our Reducing Mortality Collaborative has worked with nine Trusts with high Hospital Standardised Mortality Rates (HSMR). As a result these organisations delivered reductions in mortality rates at a faster pace than the regional or national average. The learning from this work was rolled out to all AQuA members in 2011.

David Fillingham is AQuA’s Chief Executive. UHMB joined AQuA in November 2011.
Appendix D: AQuA’s Reducing Mortality Driver Diagram

**Primary Drivers**

- **Clinical Care**
  - Provide safe, evidence-based care by implementing care bundles / patient pathways.

- **End of Life Care**
  - Provide patients an excellent experience at the end of life in a setting of their choosing.

- **Documentation & Informatics**
  - Patient documentation and coding is accurate, includes all relevant clinical information, and is used effectively to improve care.

- **Leadership**
  - The organisation has the data, reporting and leadership skills it needs to manage and improve standardised mortality.

**Secondary Drivers**

- Implement evidence-based care for our leading causes of death (e.g., Sepsis, Stroke, CHF, VTE) as per data.
- Implement / continue a strategy to eliminate hospital acquired infections.
- Implement / continue strategy to reduce patient harm.
- Understand / agree infrastructure priorities that pose barriers to evidence based care (OOh care, vacancies, clinical leadership, etc.) and develop a plan to prioritise / address them.

- Support a community partnership to increase comfort and dignity for people who choose to remain in their home at the end of life.
- Increase the capacity of nursing homes to provide palliative care.
- Ensure patients in the hospital are reviewed for ceiling of care and placed on LCP when appropriate.

- Staff have sufficient skills in utilising standardised mortality data.
- Measure / improve the completeness of co-morbidity coding.
- Implement accurate palliative care coding.
- Implement accurate documentation of first episode of care.
- Policies, training, and forms enable complete / accurate documentation and coding.
- Regular, real-time monitoring of data completeness and accuracy takes place and is reported up as a system measure.

- Leaders know everything they need to about the organisation’s standardised mortality data.
- Clinicians take responsibility for processes and outcomes.
- Board meeting agendas include useful mortality information and the Board makes decisions based on this information.
- Leaders prioritise organisation efforts to reduce mortality and standardised mortality.

**Goal**

By 1 April 2011, this organisation will have improved its adjusted mortality by at least 10 points during 2010 – 2011 as measured by CHKS or Dr. Foster.