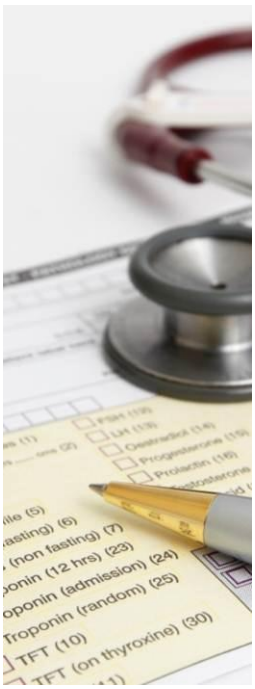

Independent Review of Mortality Rates at the Manor Hospital

Final Report

March 2013

Walsall Council

Confidential

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Mott MacDonald

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Mott MacDonald, 10 Fleet Place, London EC4M 7RB, United Kingdom
T +44 (0)20 7651 0300 F +44 (0)20 7651 0310, W www.mottmac.com

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Mott MacDonald, 10 Fleet Place, London EC4M 7RB, United Kingdom
T +44 (0)20 7651 0300 F +44 (0)20 7651 0310, W www.mottmac.com

Content

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Executive Summary

1. Walsall Council required an independent review of mortality rates at the Manor Hospital Walsall, in the context of overall levels of mortality in Walsall Healthcare NHS Trust, and more generally across the health and social care economy of the Borough.

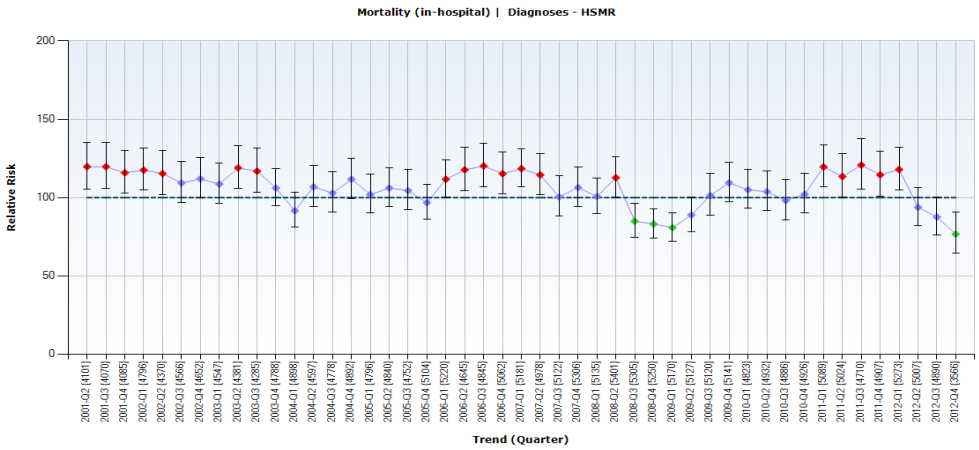
2. The remit of this review was to focus on the period from late 2010 to present during which the Hospital Standardised Mortality Ratio (HSMR) was at times raised. The review excluded these areas: clinical practice in wards, assurance / assessment of change initiatives on the ground, the way in which change initiatives have been introduced, and on-going monitoring and evaluation.

3. This review was conducted from January to April 2013 using a three part approach comprising of population and external system factors, qualitative appraisal of quality of care and a quantitative analysis of relevant data. This involved interrogating a range of information sources which contain data and indicators relevant to the measurement of the Trust's mortality, including HSMR, Standardised Hospital-level Mortality Indicator (SHMI) and more detailed relevant datasets. We interviewed 18 executives, senior clinical stakeholders from Walsall Healthcare NHS Trust, the CCG and representatives from Walsall Council.

4. HSMR and SHMI are complex adjusted measures of relative mortality. They are both constructed by using national hospital data sets and creating adjustment weightings for a number of hospital and non-hospital risk factors such as the age, sex, deprivation, main condition and other conditions the individual has. A range of other factors are also used in the adjustment process. These weightings are then used to calculate an 'expected' risk for each hospital patient based on their personal characteristics. When added up to a hospital level this can be compared to actual mortality rates and a ratio shown that compares actual to expected. This ratio shows the comparison to the national average which is set at 100. These are very complex measures and there is significant ongoing debate as to how they are constructed and interpreted. SHMI and HSMR have slightly different constructions taking into account different items in the adjustment methodology.

5. There are factors in the population and structure of services in Walsall borough that will put increased strain on Walsall NHS Trust. These include: poor life expectancy, high prevalence rates of chronic conditions and smoking, patient preference to engage with secondary care (A&E / OOH) in place of primary care, low historic educational attainment, high rates of deprivation, limited access to end-of-life support and care in the community (including residential and nursing homes) and both short and long term unemployment.

6. When HSMR was first created in 2001, Walsall Healthcare NHS Trust had the highest HSMR in England. A series of initiatives were put in place to address this. In 2008 the Trust was identified, along with many other Trusts in England, as having a high rate of palliative care coding which can have the effect of lowering HSMR. In response to this the Trust brought its rate of palliative care coding back down to below the national average. This relates to initial and then revised Connecting for Health coding clinic guidelines on the use of the palliative care (Z515) code, which is a known national issue. In 2009-10 HSMR began to increase again to the point where in Q1-2011 to Q1 2012 HSMR was significantly above expected (as identified by red marks on the following graph).



Source: Dr Foster's Intelligence

7. In Q2 2012 the Trust's HSMR began to decrease towards acceptable levels and the latest data available (Q4-2012) shows the Trust's HSMR is now below the national average. This drop was observed for both crude mortality and HSMR, which is encouraging and likely indicates that the drop in HSMR is due to improvements in the hospital care that are reducing the chance of patient death and is not solely due to other factors which are known to influence HSMR, such as increased rates of palliative care coding. The latest available SHMI data does remain higher than expected, however we believe this likely due to the inclusion of 6 months of data in the calculation which includes the first quarter of 2012 when HSMR was still significantly above expected. The reasons for the recent drop in HSMR were investigated and are believed to be as follows:

   a) The new executive team in the Trust (late 2010 to mid-2011) has implemented a range of initiatives to address issues regarding quality of care, implementing a number of wide-ranging changes. These would be expected to have a positive effect in reducing mortality, though attribution is not possible with this level of review. They include:

      i) Implementation of 6-day consultant ward rounds for every patient has been achieved, and 6-day consultant led medical review for every patient is in progress. The intention is to move to a full 7-day consultant presence. Heightened risk of mortality on weekends is a factor that has been cited where traditional patterns of consultant review are in place. This required renegotiation of all consultant job plans.

      ii) There have been increases in staffing levels with additional Acute Physicians in the Acute Medical Unit (AMU).

      iii) A new Care Bundle approach (modelled on Nightingale foundation, a national nurses charity that is respected as an authority on the care bundle approach) has been introduced for Pneumonia and Sepsis. Bundles for COPD and other areas are in the process of being introduced.

iv) Regular mortality reviews now look at every death in the hospital (rather than a sample). Consultants review every case with an extended range of participants, with the aim of ensuring lessons are widely disseminated. This has been developed with the input of a national leader in clinical mortality review (Dr Martin Farrier, Wrightington, Wigan and Leigh NHS FT) who has assisted the Trust. One element of the review is to ensure that recorded information is accurate, improving the validity of the coding upon which HSMR is reliant.

v) Standardisation of ward rounds is in progress and has been partially achieved, using a new four step process where the entire multidisciplinary team first do a "board round", then see all of their patients and follow up with a team debrief to ensure decisions are swiftly enacted. Finally, the consultant will have a discussion with the family and/or carer if present.

b) There has been significant attention on understanding and improving the end of life care pathway and palliative care practice, coordinated between the Trust and the wider health community, including the establishment of a CCG led mortality reference group, as well as mortality reviews at the Trust. This has included a number of planned service developments, instigated and commissioned by the PCT in 2009:

i) The appointment of two new palliative care consultants who began work in June and September 2012, replacing the previous 0.5 FTE incumbent. One of these palliative care consultants works primarily in the Trust and provides a comprehensive service and sees all referrals for palliative care. The other was a cross sector appointment instigated by the CCG with a wider remit. As a consequence all of these patients are coded as receiving palliative care. This is likely to have an impact, reducing HSMR, and palliative care coding is now above the national index rate. A thorough internal review process is in place to ensure the appropriateness of such coding and an additional external review is being sought for further assurance. We have not undertaken a case note level audit; from the information available we believe that proper clinical and coding guidelines are being followed and the level of palliative care coding appears to be appropriate.

ii) The opening of St Giles Hospice in April 2011 has increased the provision of inpatient hospice care in the borough (12 beds), although the proportion of deaths in hospice care in Walsall remains well below the national average in published data this lags behind real time and local data suggest that the borough 'place of death' rate for hospices is now at the national average. This change in place of death from the Acute Trust to the hospice will have removed observed deaths (numerator) from both HSMR and SHMI calculations reducing hospital mortality rate under these methodologies. Local data indicates that approximately 10 fewer deaths per month now occur in the Acute Trust. In the context of HSMR this is very significant.

iii) The CCG has led work on improving quality of care in nursing homes, which is starting to increase capability and confidence of nursing homes to care of patients at the end of life rather than referring to hospital, which is understood to be an historic issue. The establishment of 3 dedicated palliative care beds in the Arboretum nursing home is part of this effort, as is the pilot underway with four nursing homes comprising specialist consultant outreach and closer GP management in to nursing homes.

c) Experience elsewhere from related data oriented reviews indicates that all of these can have a positive effect on quality of care and therefore influences true mortality rates. In the case of Walsall, however, it is too early to gauge the impact of many of these changes as both clinical impact and data lags behind improvement initiatives. Additionally, few metrics are currently available either to monitor impacts or aid fine tuning.

8. There are still areas of concern identified with regards to Walsall Healthcare NHS Trust and local health economy's mortality:

a) It has been reported by numerous interviewees that discharge planning, both internally and integrated discharge processes with primary, community and social care, to residential, nursing homes and usual place of residence, are not working as intended, sometimes leading to longer than necessary length of stay. There is no evidence of local mortality related to this, though literature evidence indicates that delayed discharge can increase the risk of complications and mortality. Further investigation into this will be achieved by means of a joint review that will be commissioned in partnership between Walsall Healthcare Trust, Walsall CCG and Walsall Council.

b) A lack of non-invasive ventilation facilities has been raised as a concern. This increases pressure on ITU beds and can compromise quality of care for some respiratory patients. This is accentuated by Walsall's higher than average respiratory disease prevalence.

c) Changes in palliative care provision have been successful but services are still limited. The Palliative Care Centre has historically been focused on cancer, but this is starting to expand to other areas such as COPD following on-going work with the CCG in this area. A need for further provision and beds was often identified in the interviews, as was late stage admissions from nursing homes and the patient's own home (although there are now dedicated palliative care beds funded by the CCG in some nursing homes). Further hospice services are being considered to address the perceived under-provision, either as a hospice at home service or additional beds at St Giles or elsewhere in the borough. Local strategic consideration followed by modelling to determine the true resource requirement is suggested.

d) There is a perception that staffing and allocation across directorates is uneven, some areas are believed to be under allocated, those highlighted being respiratory and elderly care medicine although there are funded roles currently vacant, and the trust report that these are being recruited to.

e) There are some concerns reported regarding culture and behaviour within the accident and emergency department. Data suggests that the department is under significant and increasing pressure with high volumes of demand which may be exacerbated with changes in neighbouring providers and further focus will be required.

9. Despite these concerns, it is evident that the Walsall Health economy (CCG, Trust and Council) are clearly aware of the historical mortality in the Trust and the interdependent nature of mortality across the whole local health economy. There has been a continual focus on the issues of quality of care and mortality across the whole system and engagement, communication and commitment to cooperation across these interdependent entities is encouraging.

1. Workstream 1: Information and Data

1.1 Analysis of HSMR and SHMI

"All models are wrong but some are useful" – George Box

Hospital Standardised Mortality Ratio (HSMR) is an internationally recognised and used indicator to analyse the rate of inpatient mortality by comparing it to the national mortality rate, adjusting for various factors such as whether the patient was admitted for palliative care, how sick they were (number of comorbidities they had), and standardising for age, sex, deprivation and other population factors. It is shown as a ratio with a number higher than 100 representing higher than expected mortality and a number lower than 100 being lower than expected. HSMR has known issues, which are discussed further in the sections below, but it is nevertheless an important metric in assessing a hospital's mortality rate.

The formula used to calculate HSMR is:

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

A number of cautions need to be considered regarding any of these high level measures, these include:

Indicators such as HSMRs and SHMIs should not be used in isolation. They are a "smoke alarm", and provide an indication of where a problem might exist which should then be investigated further.
HSMRs rely on an assumption that the dataset is uniform and consistent over time. Variation in case mix, coding practice or several other factors over time can unduly influence HSMR.
Many caution the use of HSMR to compare one hospital to another, as variation in coding practice and service delivery across different hospitals will affect the comparability of HSMR. It is recommended therefore that HSMR be used to evaluate trends in a single hospital over time. However, this caution is often overlooked as HSMR is the focus of public scrutiny through published guides such as the Dr Foster's good hospital guide which is a source of much political and public attention, and is often used for the purpose of comparing hospital performance, regardless of whether this is appropriate.
Issues such as coding, variation in palliative care activity and reporting of comorbidities can all lead to high HSMRs. It is therefore important to asses these factors which are under a Trust's control, alongside the many factors that are not within a Trust's control, before making judgements based on HSMR or SHMI.

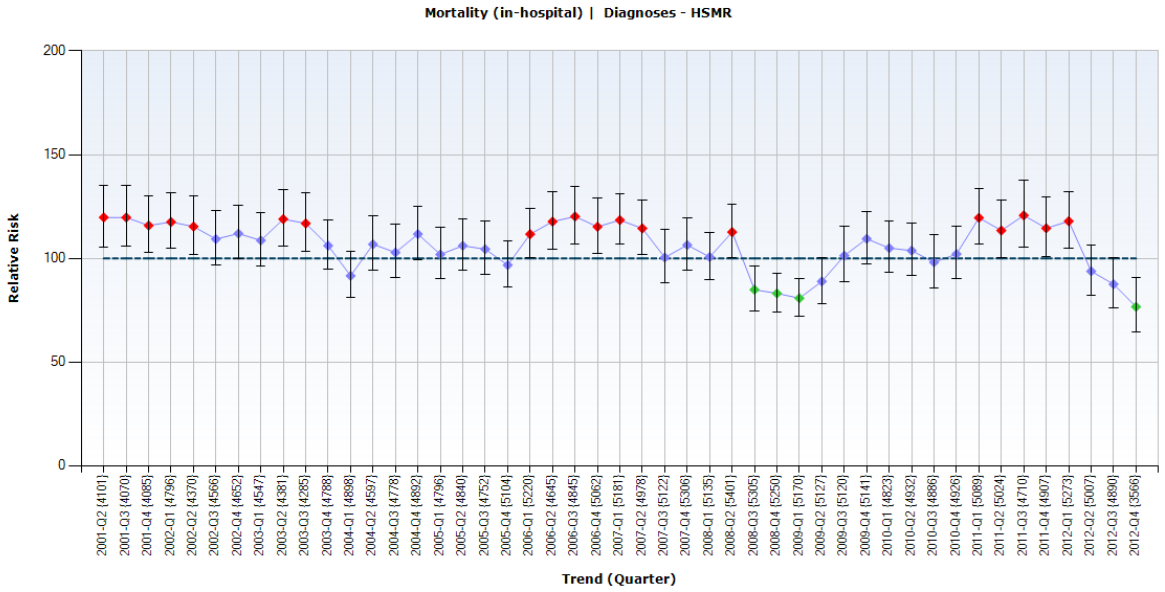
These issues are explored further in the contents of this report, with a particular focus on determining the sensitivity of key variables used within HSMR, and testing to see how Manor Hospital's HSMR has been

historically affected, and can be influenced in the future, when changes in practice, care provision and coding occur. A view is always taken to evaluate if such changes are appropriate in order to ensure that conclusions and recommendations are relevant to the health community.

Standardised Hospital-level Mortality Indicator (SHMI) is a new mortality indicator which has recently been published by the Information Centre. It is similar to HSMR, in that it takes into account factors such as differences in age, sex, diagnosis, type of admission and comorbidities, but a key difference is that it also takes into accounts all deaths (not a subgroup) and includes deaths that occur up to 30 days after discharge from hospital regardless of the location. HSMR is restricted to deaths that occur within the hospital. The same cautions that apply to HSMR apply to SHMI.

1.1.1 Overall (all condition) HSMR

Figure 1.1: HSMR Trend by Quarter since 2001 Q1



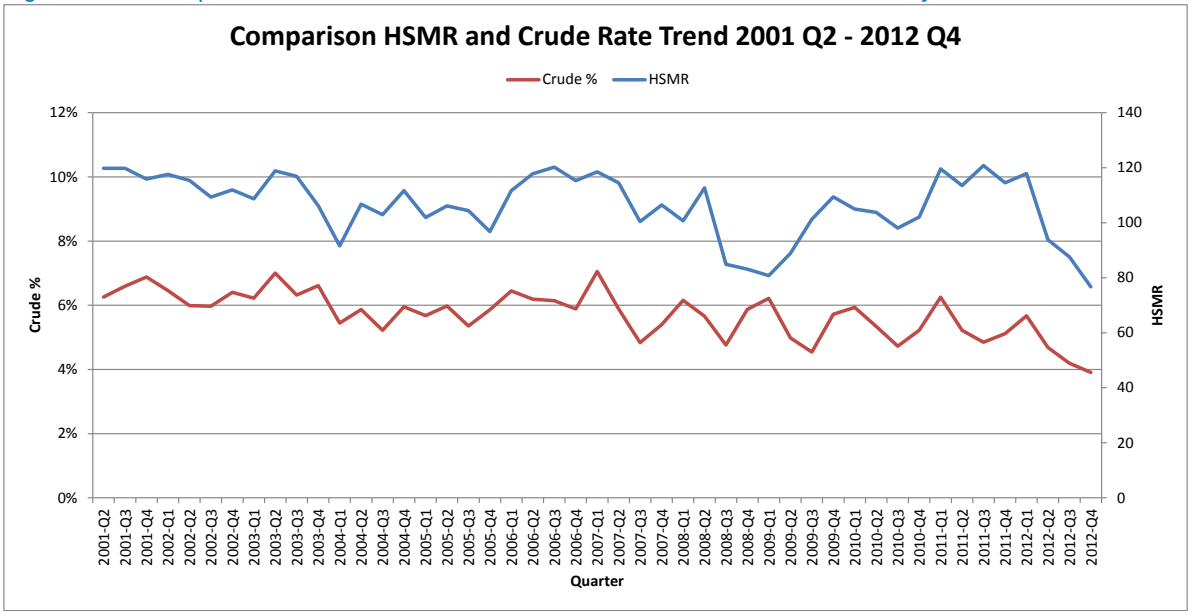
Source: Dr Foster Intelligence NB 2012 Q4 only includes data for Oct and Nov.

When HSMR was first created in 2001, Walsall Healthcare NHS Trust had the highest HSMR in England. A series of initiatives were put in place to address these issues at the time, however these were not investigated in this report as the remit was to focus on period from late 2010 to 2012. For historical context however it is useful to explain, at a high level, some of the fluctuations prior to 2010. In 2008 the Trust was identified, along with many other Trusts in England, as having a high

rate of palliative care coding which can have the effect of lowering HSMR. In response to this the Trust brought its rate of palliative care coding back down to below the national average. Further detail on this can be found in section1.1.3. This relates to initial and then revised Connecting For Health coding clinic guidelines on the use of the palliative care (Z515) code, which was a known national issue. In 2009-10 HSMR began to increase again to the point where in Q1-2011 to Q1 2012 HSMR was significantly above expected (as identified by red marks on graph above).

In Q2 2012 the Trust's HSMR began to decrease and the latest data available (Q4-2012) shows the Trust's HSMR is significantly below expected at 87.1. This drop was observed for both crude mortality and HSMR, as can be seen in Figures 1.2 and 1.3 below, which is encouraging and is consistent with the drop in HSMR being due to improvements in care in the hospital and community wide process (eg nursing home pilot and introduction of St Giles Hospice) that are reducing the chance of patient death while in the hospital.

Figure 1.2: Comparison of HSMR and Crude rate at Walsall Healthcare for calendar years 2001 - 2012



Source: Dr Foster Intelligence. NB 2012 Q4 only includes data for Oct and Nov.

Table 1.1: Observed Deaths Monthly trend compared by Fiscal Year

FY	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Av
2009/10	96	92	68	94	60	79	95	101	99	108	86	93	89.3
2010/11	91	89	84	86	85	60	79	71	108	133	79	107	89.3
2011/12	87	89	87	78	72	79	93	72	87	110	102	89	87.1
2012/13	76	76	88	68	74	64	61	79	-	-	-	-	72.4

Source: Dr Foster Intelligence

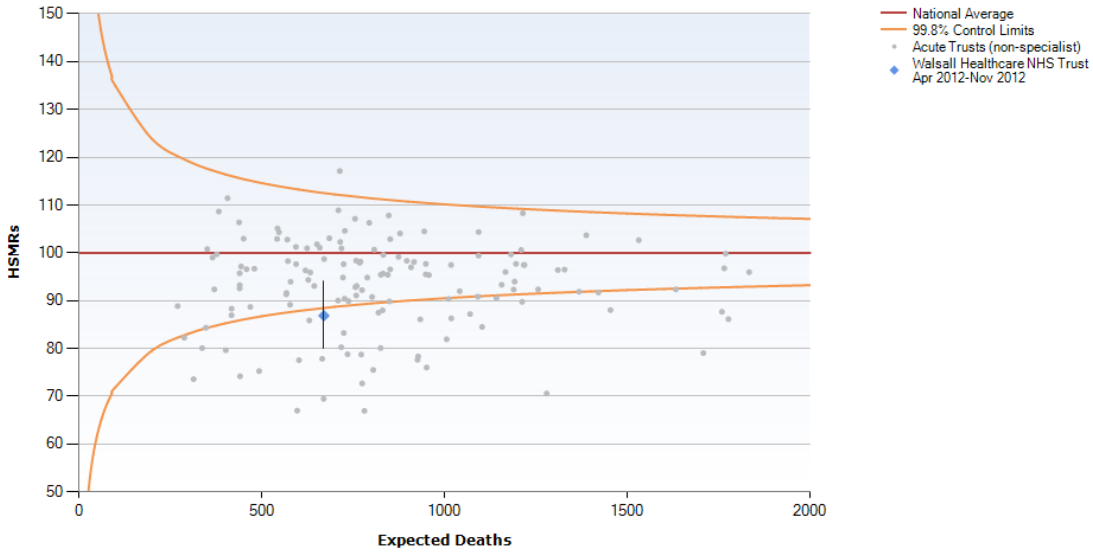
Table 1.2: HSMR Monthly trend compared by Fiscal Year

FY	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	All
2009/10	91	91.2	83.4	113.4	88.2	100	109.2	113	106.3	114.6	93.9	106.2	**101.0**
2010/11	100.4	106.1	105.1	105.8	104.2	82.7	92.4	90.8	121.3	134	99.6	121.2	**106.2**
2011/12	102.7	120.7	118	115.4	118.9	128.4	136.7	102	106.8	122.1	122.5	108.7	**116.5**
2012/13	92.5	92.1	97.5	85.5	93.5	83.7	73.5	79.4	-	-	-	-	**87.1**

Source: Dr Foster Intelligence

A funnel plot is a statistical process control chart showing where a particular hospital sits in relation to all hospitals in a given cohort, which in the case above is 'non-specialist providers' in England. The borders of the "funnel" represent the 'three standard deviations' (99.8%) control limits, whereby if a hospital is outside of these limits there is a less than 0.02% of this being due to 'random' non-significant statistical variation, or chance. The vertical axis shows HSMR and the horizontal access shows the number of expected deaths at each hospital, which generally shows the size of the hospital, with larger hospitals appearing further to the right of the graph.

Figure 1.3: Funnel plot: HSMR vs Expected Death for April 2012 – Nov 2012



Source: Dr Foster Intelligence

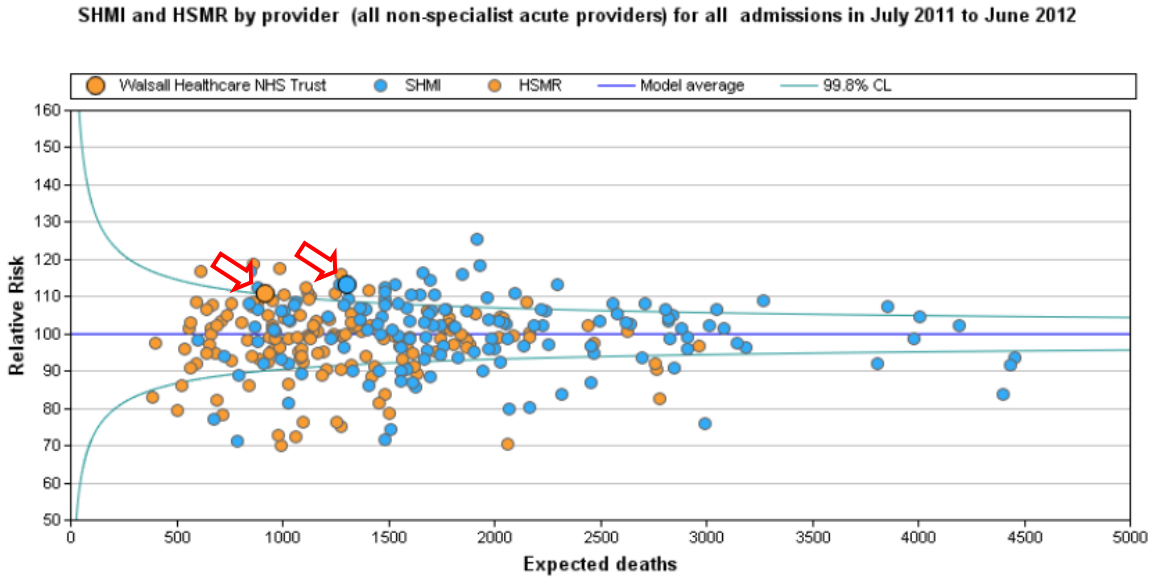
For the period April 2012 – November 2012 Manor Hospital (MH) shows lower than expected mortality demonstrated by an HSMR of 87.1, which is significantly different from expected for England (100).

The caveats regarding issues internal to organisations relating to using HSMR for comparison must be kept in mind. In addition healthcare data is commonly over dispersed with more than the expected 0.02% of organisations falling outside of control limits.

1.1.2 Overall (all condition) SHMI

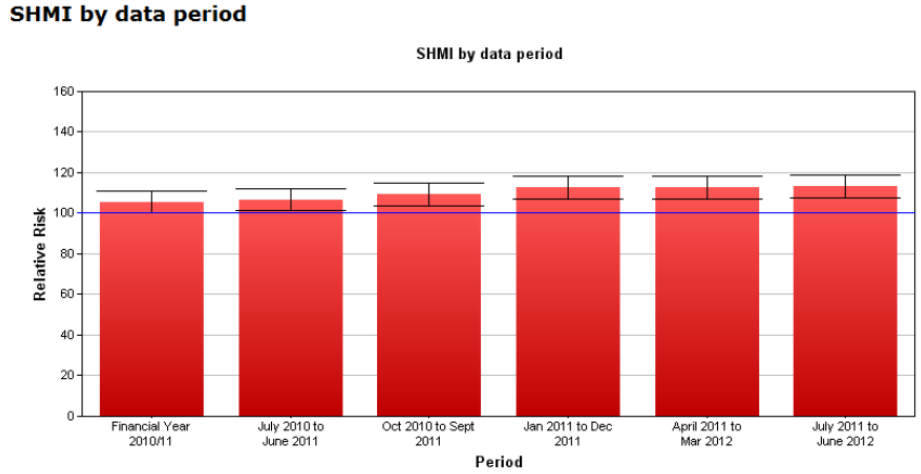
The latest available SHMI data (July 2011 to June 2012) is higher than expected at 113.19, as can be seen by the funnel plot below. When compared to HSMR over the same period however, it can be seen that the inclusion of 6 months of data in the calculation (which includes the end of 2011 and early 2012 when HSMR was still significantly above expected) is the likely explanation, as looking at HSMR for the 6 month period from July 2011 to June 2012 also shows a higher than expected ratio at 110.86. SHMI will not likely be within the expected range until the period of heightened HSMR from Q1 2011 to Q2 2012 falls outside of the 6 month window used in the calculation of SHMI.

Figure 1.4: SHMI and HSMR by provider (all non-specialist acute providers) for all admissions in July 2011 to June 2012



Source: Dr Foster Intelligence

Figure 1.5: SHMI by data period



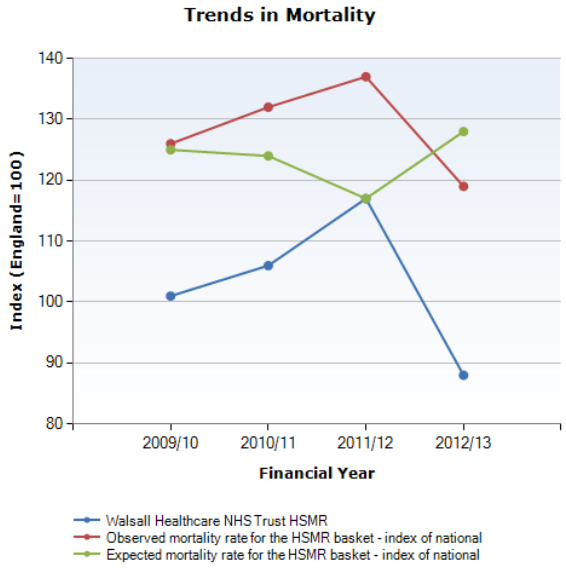
Source: Dr Foster Intelligence

1.1.3 Palliative Care coding and effects on HSMR and SHMI

The use of Palliative Care coding can have a significant effect on a hospital's HSMR, as the addition of the ICD10 code Z515 "Other medical care – Palliative Care" significantly increases the risk, or probability of death for a patient, within the HSMR calculation. If enough patients are coded with a palliative care code, this has the effect of lowering the overall HSMR for a hospital by increasing the expected chance of death for these patients in the calculation. The sensitivity of HSMR to palliative care coding is a well-documented issue and is often a source of controversy as it can provide a mechanism for hospitals to artificially lower their HSMR by over using these codes. Over-coding of Z515 widely occurred throughout the NHS from 2006/07 to 2008/09, with the proportion of deaths coded with a Z515 code increasing by over 300% nationally over this time span. This relates to initial and then revised CFH coding clinic guidelines on the use of the palliative care (Z515), which is a known national issue. This was also a focus in the recent Mid Staffordshire mortality review.

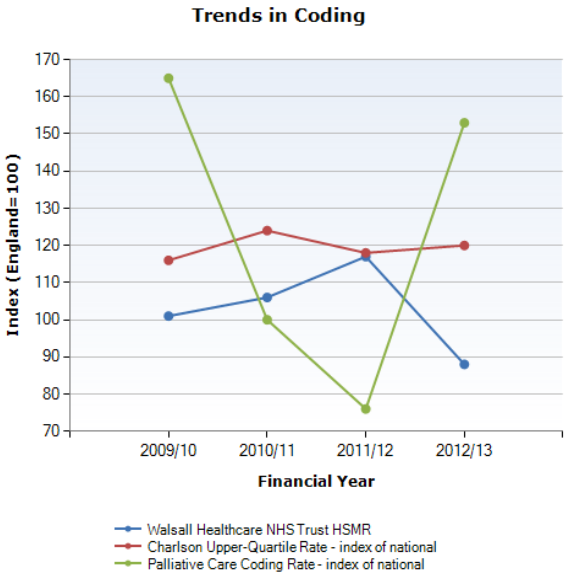
The Summary Hospital Level Mortality Indicator (SHMI) makes no adjustments for palliative care, meaning SHMI will not be affected regardless of changes in palliative care coding practice.

Figure 1.6: Trends in Mortality since 2009/10



Source: Dr Foster Intelligence
NB 2012/13 only includes data to Nov.

Figure 1.7: Trends in Coding since 2009/10



Source: Dr Foster Intelligence
NB 2012/13only includes data to Nov.

As can be seen in the charts above, Walsall Healthcare NHS Trust also experienced high rates of palliative care coding in 2009/10 compared to the national average. Palliative care coding had reduced significantly in 2010/11 and 2011/12, but has since gone up in 2012/13 (although indexed for national, 2012/13 is only based on 8 months of data). There is a clear inverse relationship between palliative care coding and HSMR.

This could be interpreted as an attempt by Walsall to reduce its HSMR artificially simply by increasing the level of palliative care coding in the hospital, however we do not believe this to be the case as other factors such as the decline in crude mortality and initiatives described further in subsequent sections of this report will show.

We believe the current rate of palliative coding, despite being approximately 1.5 times that of the national average, is appropriate for Walsall NHS Trust, as demonstrated in Chapter 3 – external factors, as a high proportion of the population die in hospital as opposed to in the community in hospices or care homes. It would be expected that many of these 'excess' patient deaths in the Trust would be appropriately receiving palliative care and then coded as such. The addition of 2 new palliative care consultants in the Trust and wider local health economy seeing all end-of-life inpatients as part of a palliative care team will also have direct causal effect on the increase in palliative care coding in the Trust. The Trust and CCG have also spent considerable effort

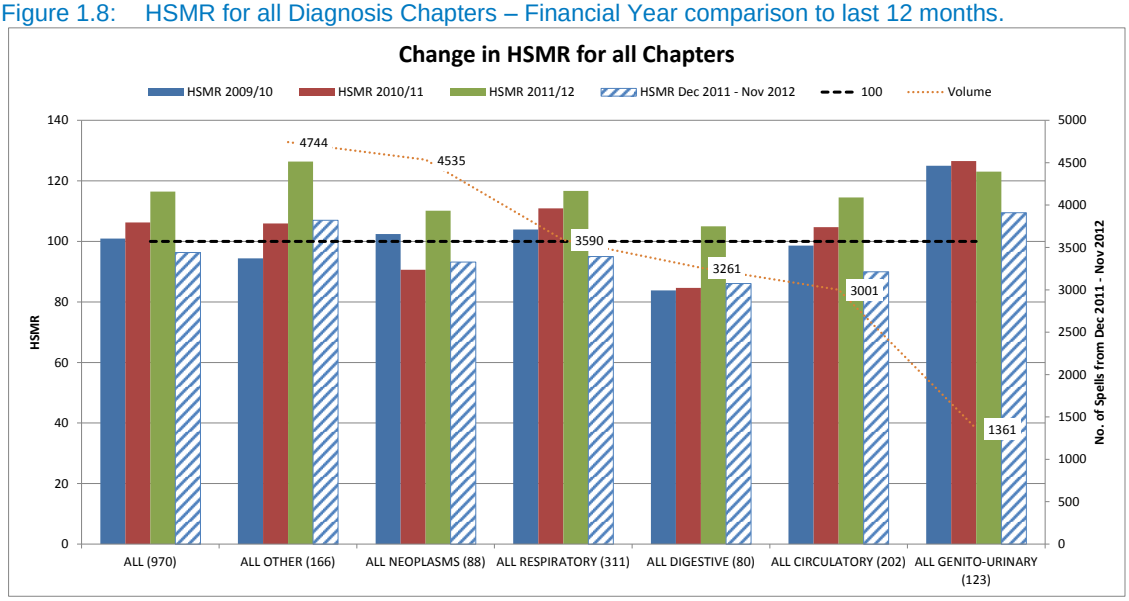
assessing the issue of palliative care coding as evidenced by private board level reporting on the issue and a report by the CCG looking at coding from January to April 2012. Both concluded the level of coding was appropriate based on national coding guidelines and clinical best practice.

1.2 Deep dives and areas of concern

HSMR can be broken down by 56 condition groups, known as CCS groups as defined by Dr Fosters. When looking at condition specific HSMR for the most recent 12 month timeframe available, December 2011 to November 2012, only one ccs group had significantly higher than expected mortality - 'Other circulatory disease'. This is a significant improvement over 2011/12 year whereby several disease groups were identified as having significantly higher than expected mortality, as shown in table A.1 in Appendix A.1.1.

The HSMR trend for each of the main disease group chapters is shown in Figure 1.8 below for the period of December 2011 to Nov 2012.

Figure 1.8: HSMR for all Diagnosis Chapters – Financial Year comparison to last 12 months.



Source: Dr Foster Intelligence

The first set of bars correspond to the total HSMR, whilst the dotted red line shows spell volume. In addition the number of observed deaths for the last 12 months is displayed in brackets as part of the axis legend.

Overall Walsall is showing lower than expected mortality in the most recent 12 months, having seen higher than expected and a continuous increase between 2009/10 and 2011/12. A similar picture can be seen for the respiratory and circulatory chapter. The Genito-urinary related chapter has seen consistently higher than expected mortality over the

last three financial years which may warrant further investigation. Both the Neoplasms and Digestive chapters are showing a variable picture with a peak in 2011/12, but lower than expected mortality in the most recent 12 months.

Further analysis is available for condition specific disease groups in Appendix A and B.

2. Workstream 2: Quality of medical care and delivery care

2.1 Background

In order to assess the quality of medical care and delivery of care in the Trust, a range of stakeholders from within Walsall Healthcare NHS Trust were interviewed including the CEO, Medical Director, Nurse Director, two Associate Medical Directors, and four Clinical Directors. A range of external stakeholders from the local health economy (CCG and Council) were also interviewed to determine external perspectives of quality of care within Walsall NHS Trust, as well as investigate areas where interdependencies between the Trust and community organisations impact HSMR.

These interviews were guided based on the insights gained from Workstream 1 and 3. Any areas that indicated a potential cause for concern were discussed with the interviewees in terms of clinical practice to gain an understanding if changes in clinical practice correlated with a change in the trend for HSMR.

It is important to note that this review excluded the following areas: clinical practice in wards, assurance / assessment of change initiatives on the ground, the way in which change initiatives have been introduced, and on-going monitoring and evaluation.

2.2 Key Themes from interviews

2.2.1 New energetic executive team in Trust

From late 2010 to mid-2011 a new CEO, Medical Director and Director of Nursing were appointed at Walsall Healthcare NHS Trust. A dynamic change in culture and working practices followed suit led by several key initiatives, some of which were not in the direct interest of those being asked to participate, such as renegotiation of job plans to include weekend and evening working. It is a testament to their management skills that these changes were successfully implemented and followed through. Examples of these initiatives include:

2.2.1.1 6 day working

Implementation of 6-day consultant ward rounds has been achieved, and 6-day consultant led medical review is in progress. The intention is to move to a full 7-day consultant presence. Heightened risk of mortality on weekends is a factor that has been cited where traditional patterns of consultant review are in place. This required renegotiation of all consultant job plans.

2.2.1.2 Increased staffing levels

There have been increases in staffing levels with additional Acute Physicians in the Acute Medical Unit (AMU). Acute medicine has increased staffing both at consultant, Senior Trainee/Registrar and Foundation Year levels from April 2012. The 46 bed AMU has been setup with increased junior staffing who are based on the unit which provides better continuity.

2.2.1.3 Implementation of care bundles

A new Care Bundle approach (modelled on Nightingale foundation, a national nurses charity that is respected as an authority on the care bundle approach) has been introduced for Pneumonia and Sepsis. Bundles for COPD and other areas are in the process of being introduced. An audit of 400 patients is under way to evaluate the effect of this, but the sense from clinicians is that this is working well.

2.2.1.4 Mortality review for each patient death

Regular mortality reviews now look at every death in the hospital (rather than a sample). Consultants review every case with an extended range of participants, with the aim of ensuring lessons are widely disseminated. This has been developed with the input of a national leader in clinical mortality review (Dr Martin Farrier, Wrightington, Wigan and Leigh NHS FT) who assisted the Trust. One element of the review is to ensure that recorded information is accurate, improving the validity of the coding upon which HSMR is reliant.

2.2.1.5 Standardisation of ward rounds

Standardisation of ward rounds is in progress and has been partially achieved, using a new four step process where the entire multidisciplinary team first do a “board round”, then see all of their patients and follow up with a team debrief to ensure decisions are swiftly enacted. Finally, the consultant will have a discussion with the family and/or carer if present.

A key driver of the new executive team was to improve quality, where previously other priorities such as physical estates planning and merging of community and acute services were the focus. Very clear role definitions were put in place and directorships were given the authority, support and leeway to implement changes. It is clear that this has contributed to an increased focus and awareness on quality of care at all levels throughout the Trust and has no doubt played a part in improvements in both crude and adjusted (HSMR) mortality in the Trust

seen from late 2012 to early 2013 as processes and improvements became embedded.

2.2.2 Whole health economy approach to palliative care and addressing HSMR

There has been significant attention on understanding and improving palliative care practice, coordinated between the Trust and the wider health community, particularly following the CCG led establishment of mortality reference group, as well as mortality reviews at the Trust. This has included a number of initiatives:

2.2.2.1 Two new palliative care consultant posts

The appointment of two new palliative care consultants, who began work in June and September 2012, replacing the previous 0.5 FTE incumbent has had a visible effect in both reducing the HSMR at Walsall Healthcare NHS Trust, as can be seen in section 1 – palliative care coding, and improving palliative care capacity in the Trusts.

One of these palliative care consultants is primarily based in the Trust and provides a comprehensive service and sees all referrals for palliative care. The other was a cross sector appointment instigated by the CCG with a wider remit.

As a consequence all patients identified as end-of-life are seen by these consultants as part of a palliative care team, and are then coded as receiving palliative care. Palliative care coding is now above the national index rate, although a thorough internal review process is in place to ensure the appropriateness of such coding and an additional external review is being sought for further assurance.

We have not undertaken a case note level audit; from the information available we believe that proper clinical and coding guidelines are being followed and the level of palliative care coding appears to be appropriate.

2.2.2.2 Opening of St Giles Hospice

The opening of St Giles Hospice in April 2011 has increased the provision of inpatient hospice care in the borough by 12 beds. Although proportion of deaths in hospice care in Walsall still remains well below the national average in published data, this lags behind real time and local data suggest that the borough ‘place of death’ rate for hospices is now at the national average. This change in place of death from the Acute Trust to the hospice will have removed observed deaths

(numerator) from both HSMR and SHMI calculations reducing hospital mortality rate under these methodologies.

2.2.2.3 Increasing capability of nursing homes

The CCG has led work on improving quality of care in nursing homes, which is starting to increase capability and confidence of nursing homes to care of patients at end of life rather than referring to hospital, which is understood to be a historic issue. The establishment of 3 dedicated palliative care beds in the Arboretum nursing home is part of this effort, as is the pilot underway with four nursing homes comprising specialist consultant outreach and closer GP management in to nursing homes.

Experience elsewhere from related data oriented reviews indicates that all of these can have a positive effect on quality of care and therefore improve true mortality rates. In the case of Walsall, however, it is too early to gauge the impact of many of these changes as both clinical impact and data lags behind improvement initiatives. Additionally, few metrics are currently available either to monitor impacts or aid fine tuning.

2.2.3 Areas of concern

There are still areas of concern identified with regards to Walsall Healthcare NHS Trust and local health economy's mortality:

2.2.3.1 Discharge planning

It has been reported by numerous interviewees that discharge planning, both internally and integrated discharge processes with primary, community and social care, to residential, nursing homes and usual place of residence, are not working as intended, sometimes leading to longer than necessary length of stay. There is no evidence of local mortality related to this, though literature evidence [1] [2] [3] indicates that delayed discharge can increase the risk of complications and mortality.

[1] Inappropriately delayed discharge from hospital: What do we know? BMJ. 2003 April 26; 326(7395): 927–928

[2] Delayed transfer of care from NHS secondary care to primary care in England: its determinants, effect on hospital bed days, prevalence of acute medical conditions and deaths during delay, in older adults aged 65 years and over, http://www.biomedcentral.com/1471-2318/9/4

[3] Critical role of functional decline in delayed discharge from an acute geriatric unit, Ann Acad Med Singapore. 2001 Nov;30(6):593-9.

Further investigation into this will be achieved by means of a joint review that will be commissioned in partnership between Walsall Healthcare Trust, Walsall CCG and Walsall Council.

2.2.3.2 Non-invasive ventilation capacity

A lack of non-invasive ventilation facilities has been raised as a concern. This increases pressure on ITU beds and can compromise quality of care for some respiratory patients. This is accentuated by Walsall's higher than average respiratory disease prevalence.

2.2.3.3 Palliative care capacity

Changes in palliative care provision have been successful but services are still limited. The Palliative Care Centre has historically been focused on cancer, but this is starting to expand to other areas such as COPD following on-going work with the CCG in this area. A need for further provision and beds was often identified in the interviews, as was late stage admissions from nursing homes and the patient's own home (although there are now dedicated palliative care beds funded by the CCG in some nursing homes). Further hospice services are being considered to address the perceived under-provision, either as a hospice at home service or additional beds at St Giles or elsewhere in the borough. Local strategic consideration followed by modelling to determine the true resource requirement is suggested.

2.2.3.4 Staffing levels and allocation across directorates

There is a perception that staffing and allocation across directorates is uneven, some areas are believed to be under allocated, those highlighted being respiratory and elderly care medicine although these are funded roles currently vacant, and the trust report that these are being recruited to.

For example it was mentioned that there are relatively low numbers of respiratory consultants for the population and catchment. This creates an issue whereby new staff are reluctant to join a short staffed unit, as workload will be greater and support limited in comparison to higher staffed unit elsewhere. A review completed previously for the Trust recommended the unit have 7 respiratory consultants. At the time of the review they had 3, we understand the Trust is now recruiting for a fourth and are considering further appointments in the future.

2.2.3.5 A&E

There are some concerns reported regarding culture and behaviour within the accident and emergency department. Data suggests that the department is under significant and increasing pressure with high volumes of demand which may be exacerbated with changes in neighbouring providers and further focus will be required.

Despite these concerns, it is evident that the Walsall Health economy (CCG, Trust and Council) are clearly aware of the historical issue of HSMR in the Trust and the interdependent nature of mortality across the whole local health economy. There has been a continual focus on the issues of quality of care and mortality across the whole system and engagement, communication and commitment to cooperation across these interdependent entities is encouraging.

3. Workstream 3: External Factors

3.1 Background

The final aspect of the Manor Hospital's HSMR investigation was to look at the external non-trust health care practices and behaviours in the local health community that are outside of the Trust's direct ability to control, which can influence HSMR. Examples of these include place of death, other resources for managing long term and terminal care and their behaviour in the community, and primary care behaviour and provision to ascertain what if any impact this has on the Trust regarding mortality.

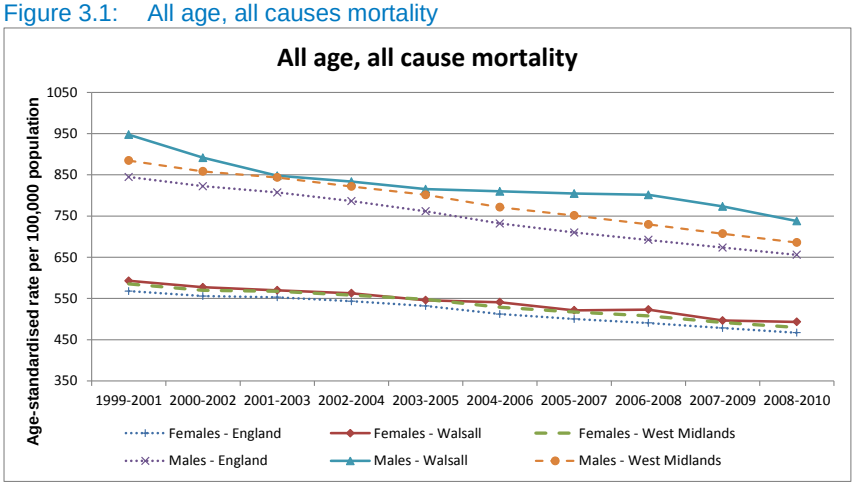
HSMR compares observed mortality with that which would be expected based on averaged national casemix and outcomes. Unobserved local case mix variation influences the local hospital as not all factors are taken into account in the methodology. PCT areas that experience higher-than-expected in-hospital dying are also more likely to have lower-than-expected out-of-hospital dying.

Variation in the hospital case mix may distort results, particularly with regard to near-death patients. Data regarding demographics is well captured and adjusted for, co-morbidities less so and severity of illness poorly if at all. Developing an understanding of these kinds of factors in the local population and the structure of local services that surround the hospital are crucial factors in informing in the short term an understanding of why a poor HSMR might not be solely due to Trust related factors and in the longer term informing a local health community engagement and change programme to manage some of the issues highlighted.

3.2 Mortality in the population

Mortality rates (deaths per 100,000 resident population) in the Walsall population is higher than the national average. Although the overall mortality rate of the Walsall population has continued to fall over the past 10 years it is still higher than that of England and the West Midlands for both genders.

Figure 3.1: All age, all causes mortality



Source: Health Profiles 2012 – nb data points are mid-points of the 3 year period.

The main causes of death for people within Walsall are cancer, coronary heart disease and pulmonary disease.

Age standardised death rates for heart disease and stroke in under 75s have fallen steadily from 141 in 1999/01 to 83.7 in 2008/10 in line with the national trend (from 114 to 67.3), however they are still significantly higher than those of England and higher than the West Midlands at 70.3 per 100,000 population.

Early death rates from cancer have also declined over the same period with a reduction from 136.6 to 122. Although this follows the national trend it is still significantly higher than that of England at 110 per 100,000 population.

Whilst the number of smoking related deaths has started to fall in recent years (from a high of 256.48 in Health Profiles 2011) at 242 it is significantly higher than the West Midlands (209) and the England average (211).

3.2.1 Place of death in Manor Hospital catchment population

The latest data available (2008-10) from the National End of Life Care Intelligence Network (figure 3.4) reveals that significantly more people in the Walsall population die in hospital and at home, and significantly less people die in hospices or care homes when compared to the national average. It is relevant to note here that compared to national average there is a low rate of provision of care home and care home beds for the local authority population in Walsall.

Figure 3. 2: Location of deaths in Walsall – 2008-2010

	Indicator Type	LA (upper tier)	No. Cases / ...	Value	England Av...	Current Performance
Care homes	38. Number of care homes per 1,000 population aged 75+		68	3.3	4.4	1.2
	39. Number of care home beds per 1,000 population aged 75+		1,765	85.2	114.1	35.7
	40. Percentage of care homes achieving Gold Standard Framework		2	2.9%	1.6%	0.0%

Significance compared with England average: higher lower none could not be calculated
England Average SHA Value

Source: National End of Life Care Intelligence Network (2008-2010)

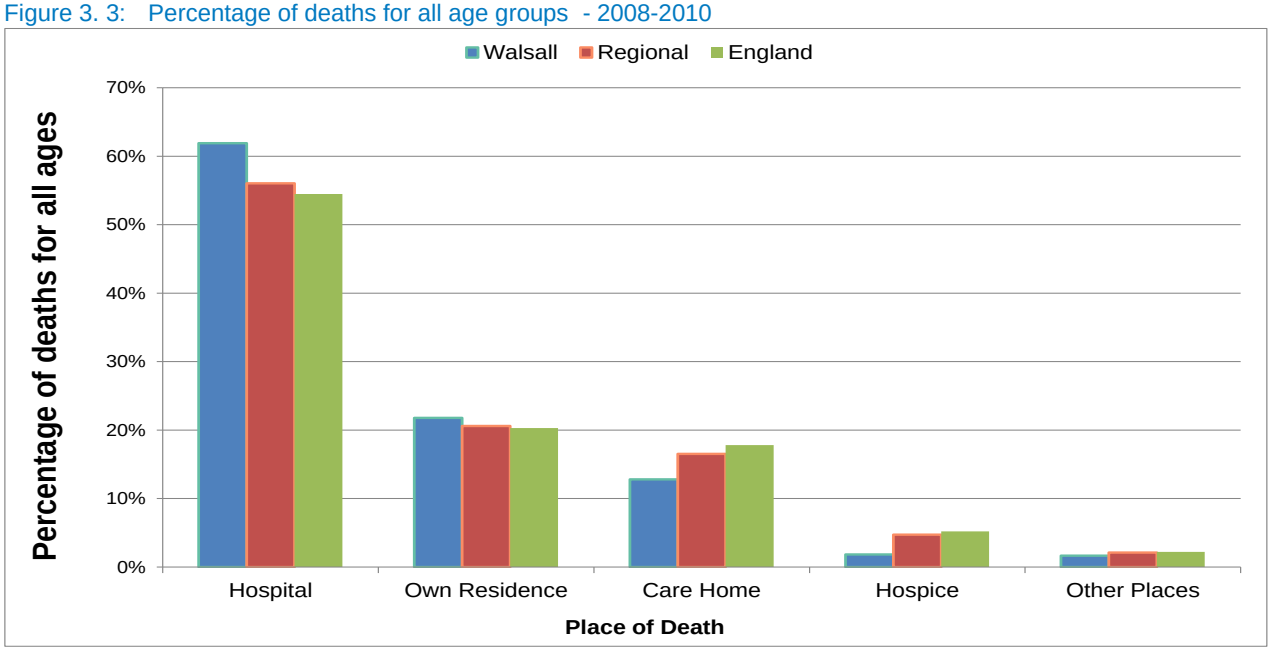
A concerted effort on the part of Walsall Council has been made to increase support to enable people to be care for, and die at, home if they wish. One issue with this data source is the timeliness of the data, now being more than 2 years out of date. It is our understanding, through interviews conducted with public health leads in the CCG, that the opening of St Giles Hospice in 2011 has increased the provision inpatient hospice care in the borough (12 beds) and that the borough 'place of death' rate for hospices is now closer to the national average.

This change in place of death from the Acute Trust to the hospice will have removed observed deaths (numerator) from HSMR and may reduce observed deaths from the SHMI calculation if patients were not previously in the Manor Hospital less than 30 days prior to death. This will reduce hospital mortality rate under these methodologies. It has been suggested that approximately 10 fewer deaths per month now occur in the Acute Trust. In the context of HSMR this is very significant. Actual data was not available or provided to us, but this can be confirmed once the End of Life care profiles are updated for 2012-13. Nevertheless, the 2008-10 data does show the historical issue of low palliative care provision in the borough with only 1.9% of deaths occurring in hospices in the borough compared to the England average of 5.4%, and 12.8% in care homes in the borough compared to 17.8% nationally. The situation has likely improved, as evidenced through interviews with those responsible for provision and capacity, which is a likely significant contributor to the reduction of HSMR in early 2012 at the Manor Hospital.

The CCG has led work on improving quality of care in nursing homes, which is starting to increase capability and confidence of nursing homes to care of patients at the end of life rather than referring to hospital, which is understood to be an historic issue. The establishment of 3 dedicated palliative care beds in the Arboretum nursing home is part of this effort, as is the pilot underway with four nursing homes comprising specialist consultant outreach and closer GP management in to nursing homes.

The addition of two new palliative care consultants has also increased palliative care and end-of-life capability in the health economy of Walsall Healthcare NHS Trust. One of these palliative care consultants is primarily based in the Trust and provides a comprehensive service and sees all referrals for palliative care. The other was a cross sector appointment instigated by the CCG with a wider remit. Refer to section 2.2.2 for additional information on palliative care services in the Trust and wider community.

Figure 3. 3: Percentage of deaths for all age groups - 2008-2010



Source: National end of life Intelligence Network

Figure 3. 4: Location of deaths in Walsall – 2008-2010

Indicator Type	LA (upper tier)	No. Cases / ...	Value	England Av...	Current Performance	
23. Percentage of deaths in hospital	Walsall	1,534	61.9	54.5	42.2	70.2
24. Percentage of deaths in own home	Walsall	540	21.8	20.3	16	27.2
25. Percentage of deaths in hospice	Walsall	46	1.9	5.2	0.1	12.7
26. Percentage of deaths in care home	Walsall	317	12.8	17.8	3.7	32.1

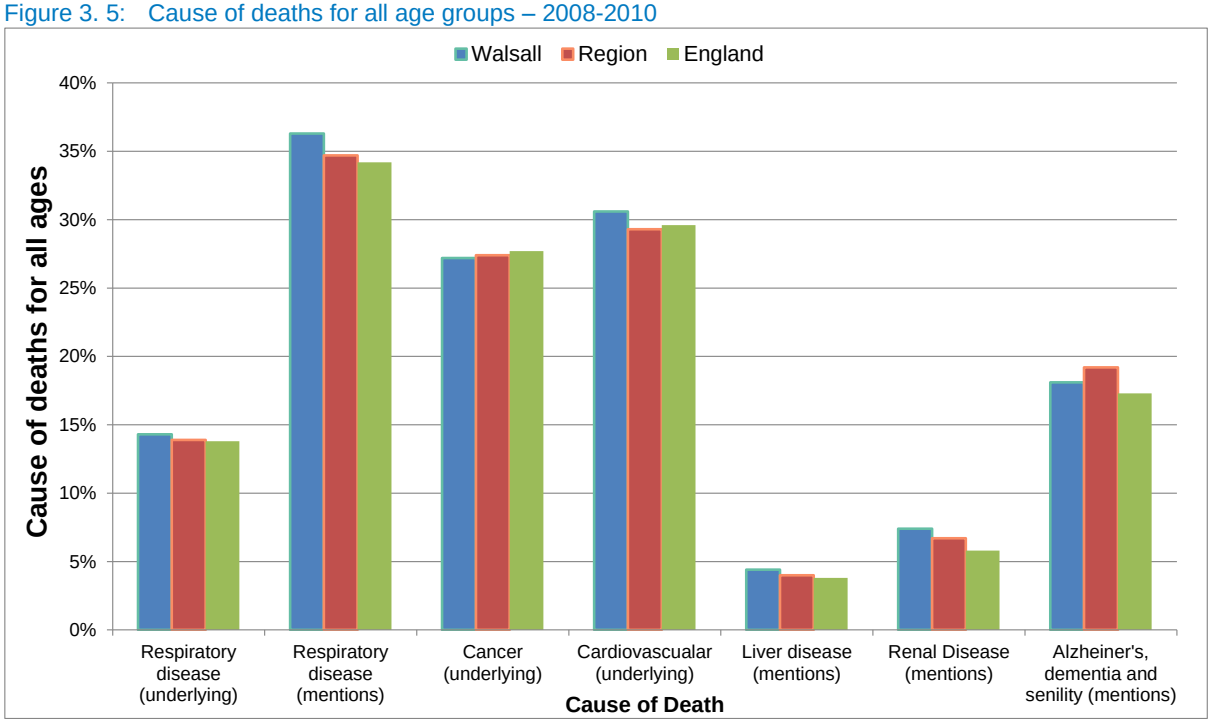
Significance compared with England average: higher lower none could not be calculated
England Average SHA Value

Source: National End of Life Care Intelligence Network (2008-2010)

3.2.2 Cause of death in population

In terms of the cause of deaths in the borough, Walsall reports more Respiratory, Cancer, Liver and Renal deaths than England. In contrast there are fewer deaths from Cardiovascular and Alzheimer's/Senility are less than those of England.

Figure 3. 5: Cause of deaths for all age groups – 2008-2010



Source: National end of life Intelligence Network

3.3 Demographic and socio-economic characteristics

Walsall Healthcare NHS Trust has a catchment population of approximately 260,000[4]. The age of the population is broadly similar to that of England with approximately 50% between the ages of 25-64, 21% under 16, 15% between 65 and 84, 12% are 16 to 24 and the remainder are 85 and over.

In general the population of Walsall are in worse health than the England average. It has higher levels of deprivation, child poverty, teenage pregnancy, sexually transmitted infections, smoking related

4 https://www.walsallhealthcare.nhs.uk/media/170238/disclosure%20log%20july-september%20quarter2.pdf

deaths. Walsall also has lower life expectancy for both males (10.8 year less) and females (6.9 years less) than the England average. Whilst mortality rates have fallen over the past 10 years, they are still worse than average.

In contrast the rate of road injuries and deaths, along with statutory homelessness, incidents of malignant melanoma and hospital stays for self-harm are lower than average.

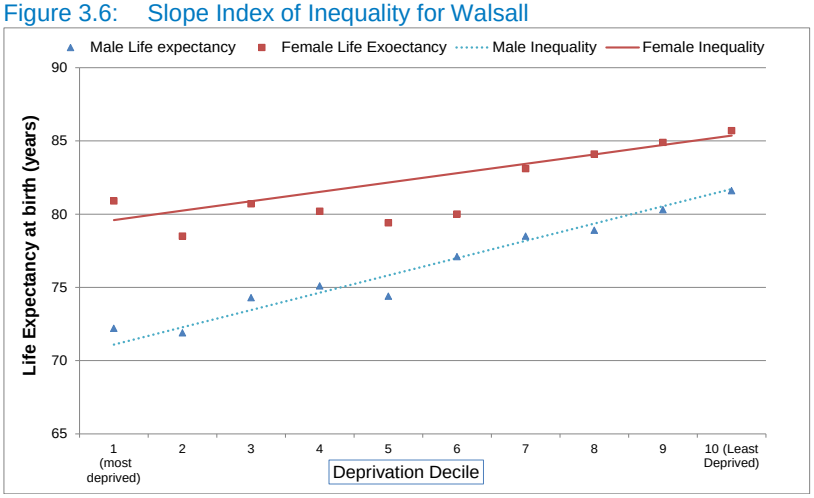
Walsall performs relatively poorly on most of the 2012 health profile indicators compared to the rest of England.

Examples of this include:

- 44.4% of the local population living in the 20% most deprived areas in England
- One of the highest rates of people diagnosed with diabetes in England (7.7% compared to 5.5% England average and 8.1% for the worst borough in England)
- Long term unemployment (14.5 per 1,000 population compared to 6 per 1,000)
- A high proportion of infant deaths (7.7 per 1000 live births compared to 4.6 England average)
- Low birth weights (10.2% compared to 7.5% England)
- Child development at age 5 (50.9% compared to 55.6%)
- GCSE achievement (5A*-C inc. Eng & Maths) (48.9% compared to 55.1%)
- Unemployment (6.3% compared to 3.6%)
- Limiting long term illness or disability (19.8% compared to 16.9%)

The index of deprivation for 2010 shows that Walsall has significantly higher proportions of child poverty (30.1%) and older people living in deprivation (26.3%) compared to England, whilst 6% more people suffer from income deprivation. Overall Walsall was ranked the 35th most deprived Local Authority in England out of 326.

Figure 3.6: Slope Index of Inequality for Walsall

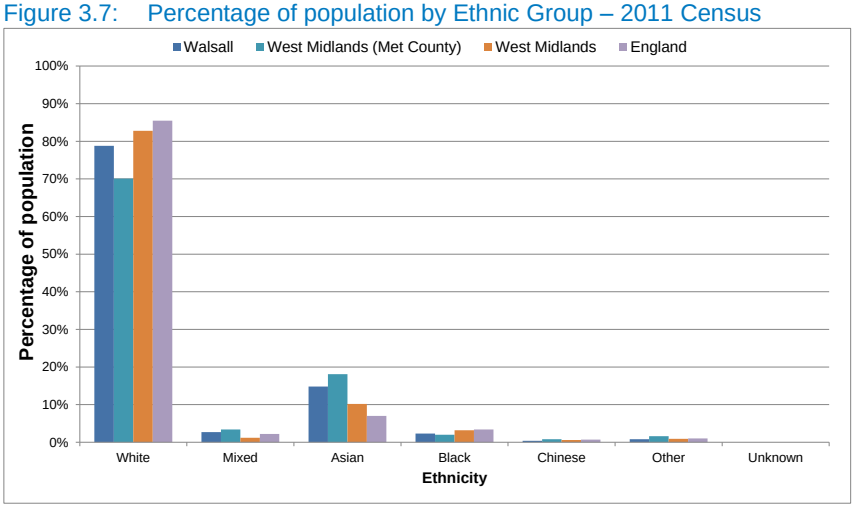


Source: Health Profiles 2012

Average life expectancy is significantly lower in Walsall for males (76.9 years) and females (81.9 years) compared to England, where males on average live to 78.6 and females to 82.6.

According to the 2011 Census the population of Walsall has a higher percentage of Asians (14.8%) and lower proportion of Whites (78.8%) compared to that of England. In comparison to the West Midlands-Met County where there is an even higher proportion of Asians (18.1%) and lower proportion of Whites (70.1%)

Figure 3.7: Percentage of population by Ethnic Group – 2011 Census



Source: ONS 2011 Census

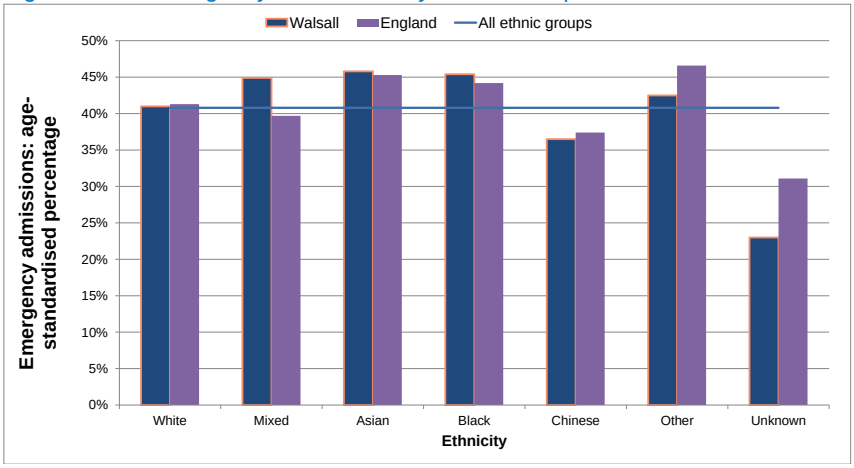
Table 3.1: Percentage population by Ethnic group according to 2011 Census.

Area	White	Mixed	Asian	Black	Chinese	Other
Walsall	78.8%	2.7%	14.8%	2.3%	0.4%	0.8%
West Midlands (Met County)	70.1%	3.4%	18.1%	2.0%	0.8%	1.6%
West Midlands	82.8%	1.2%	10.2%	3.2%	0.6%	0.9%
England	85.5%	2.2%	7.0%	3.4%	0.7%	1.0%

Source: ONS 2011 Census

The Asian ethnic group largely consists of Indians (41%), Pakistani (36%) and Bangladeshi (12%) residents. This wide cultural mix has an impact on the levels of service required by the residents within the area.

Figure 3.8: Emergency Admissions by Ethnic Group



Source: Health Profiles 2012

The England average for all ethnic groups is 40.8% and although there are some groups that have a higher admission rate, with the exception of Mixed and Other, they are similar to those observed in England. Only admissions for mixed ethnicity have a significantly higher percentage (44.9%) compared to England (39.7%) which may reflect that some patients in this group are not accessing or receiving the care most suited to managing their conditions.

3.4 Lifestyle

The adult population of Walsall has lower levels of increasing and high risk (binge) drinking (20%) than that of England (22.3%). In generally they are more obese, smoke more, participate in less physical activity and eat less healthy than the rest of England. Whilst the levels of adults that participate in some physical activity (3 to 5 x 30 minutes per week) has increased (from 24% in 2006 to 27% in 2010) it is still below the

England average. In addition less than half the residents take part in any type of physical activity and an even smaller proportion eat the recommended levels of fruit and vegetables.

Figure 3.9: Adult Lifestyle Indicators

Domain	Indicator	Local No. Per Year	Local Value	Eng Avg	Eng Worst	England Range	Eng Best
Adults' health and lifestyle	12 Adults smoking ‡	n/a	22.7	20.7	33.5		8.9
	13 Increasing and higher risk drinking	n/a	20.0	22.3	25.1		15.7
	14 Healthy eating adults	n/a	21.8	28.7	19.3		47.8
	15 Physically active adults ‡	n/a	7.8	11.2	5.7		18.2
	16 Obese adults ‡	n/a	27.8	24.2	30.7		13.9

Source: Health Profiles 2012

Incidence of malignant melanoma and hospital stays for self-harm are significantly better than the England average; however all other disease and poor health indicators are worse than those of England. The number of people diagnosed with diabetes, hospitals stays for alcohol related harm, levels of drug misuse and acute sexually transmitted infections (STIs) are significantly worse. In addition the number of people diagnosed with diabetes (7.7%) is close to the worst levels (8.1%) in England.

The Foresight Report[5] predicts that 36% of men and 28% of women between the ages of 21 and 60 will be classed as obese by 2015. In Walsall where levels of obese adults are already significantly high, these rates are expected to be even higher. The high levels of obese people are reflected in the high levels of diagnosed diabetes and low levels of Physical activity.

Levels of smoking related deaths in Walsall have continued to drop in recent years, but are still significantly worse than the England average. Smoking prevalence within the area is 24.5% (approximately 50,000 adults). This is reflected in both the high levels of smoking during pregnancy and also the high number of young people smoking. In contrast the number of people that have stopped smoking has remained constant.

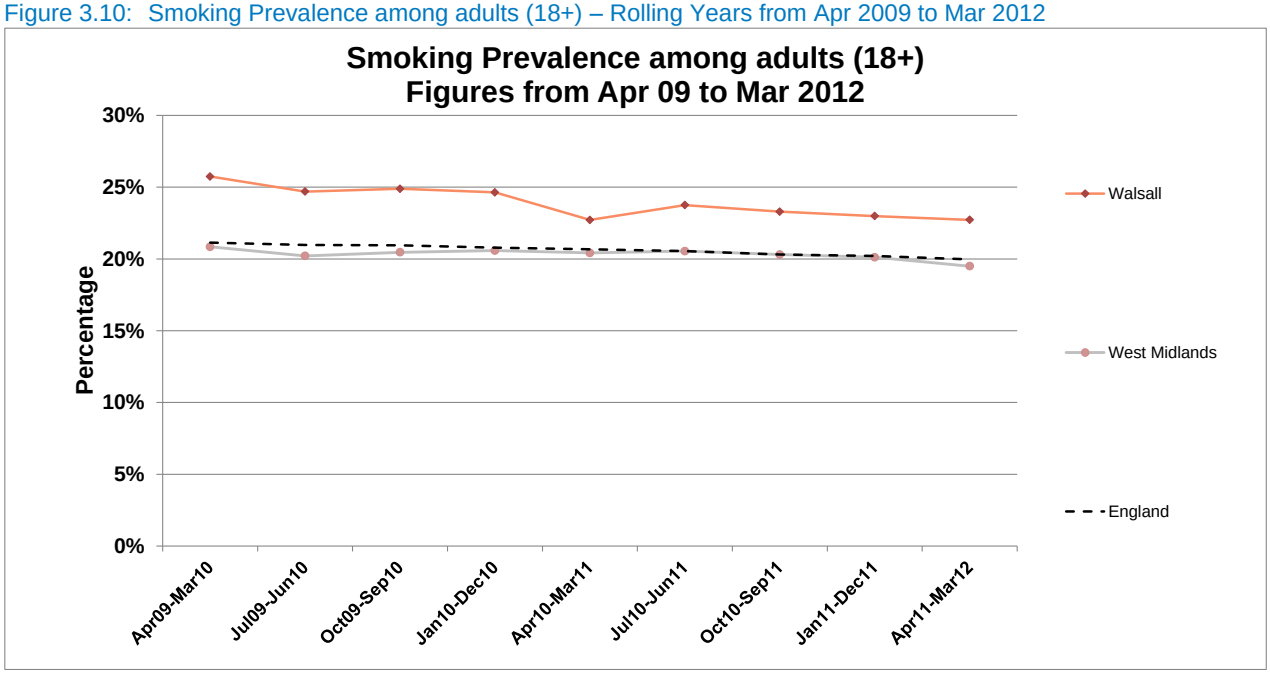
5 Foresight Report (2007): Tackling Obesities; Future Choices. http:/www.idea.gov.uk/idk/core/page.do?pageId=8267926

Table 3.2: Smoking Prevalence among adults (18+) – 2011/12

Area	Sample Size	Current Smoker	Ex-Smoker	Never Smoked
Walsall	359	31.0%	25.3%	43.7%
West Midlands	5,428	28.5%	26.3%	45.2%
England	45,345	30.3%	29.4%	40.3%

Source: London Health Observatory (www.lho.org.uk/viewResource.aspx?id=16678)

Figure 3.10: Smoking Prevalence among adults (18+) – Rolling Years from Apr 2009 to Mar 2012



Source: London Health Observatory (www.lho.org.uk/viewResource.aspx?id=16678)

In recent years the birth rate across Walsall has risen, whilst the infant mortality rate is significantly higher than England, which is at an all-time low. In addition the levels of smoking during pregnancy and breast feeding initiation which can impact on infant mortality are also significantly worse than England.

Children and young people are slightly less likely to stay in hospital as a result of alcohol or be admitted as a result of unintentional or deliberate injury.

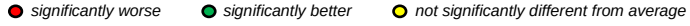
Although levels of child obesity (10%) are slightly above the England average (9.6%) when children start school this increases to a significant

level (22.4%) by the time they reach year 6 (age 10 to 11) compared to 19% in England.

Levels of teenage pregnancy in the under 18s (at 55.4 per 1,000) is significantly worse than that of England (38.1), with around 17 more teenage pregnancies for every 1,000 female teenagers (aged 15 to 17 year olds).

Figure 3.11: Children's and young people's health Indicators

Domain	Indicator	Local No. Per Year	Local Value	Eng Avg	Eng Worst	England Range	Eng Best
Children's and young people's health	7 Smoking in pregnancy ‡	686	19.8	13.7	32.7		3.1
	8 Breast feeding initiation ‡	1934	55.1	74.5	39.0		94.7
	9 Obese Children (Year 6) ‡	711	22.4	19.0	26.5		9.8
	10 Alcohol-specific hospital stays (under 18)	36	59.0	61.8	154.9		12.5
	11 Teenage pregnancy (under 18) ‡	285	55.4	38.1	64.9		11.1



Source: Health Profiles 2012

3.5 Long Term Conditions

Currently 7.7% of people within Walsall are diagnosed with diabetes which is almost the worst level in England (8.1%) whilst the average is only 5.5%. Expected prevalence levels for Diabetes are higher for the PCT than those of England and the West Midlands region, due to the profile of the population. Levels have increased steadily over the past 4 years in line with the region but at a slightly lower rate than England. With the significantly high levels of obesity within Walsall (27.8% of adults and 22.4% of children) it is more likely that levels of diabetes will continue to increase.

For additional information on expected prevalence rates for Long Term Conditions refer to Appendix C

3.6 Primary Health and Community Services

There are several characteristics of the local health population and primary care services that present challenges in terms of providing services and ensuring preventative measures aimed at reducing risk of mortality in the population, and ultimately in the Trust, are delivered.

These include:

- Low historic education attainment
- Patient preference to engage with secondary care (A&E, OOH).
- Less than 50% of people in Walsall know who their GP is
- High proportion of single GP practices

The underlying reasons for these characteristics were not investigated, however if had been suggested that convenience of the Manor Hospital,

in terms of location, and limited patient mobility (in terms of transport options) may be a factor.

3.7 Conclusion

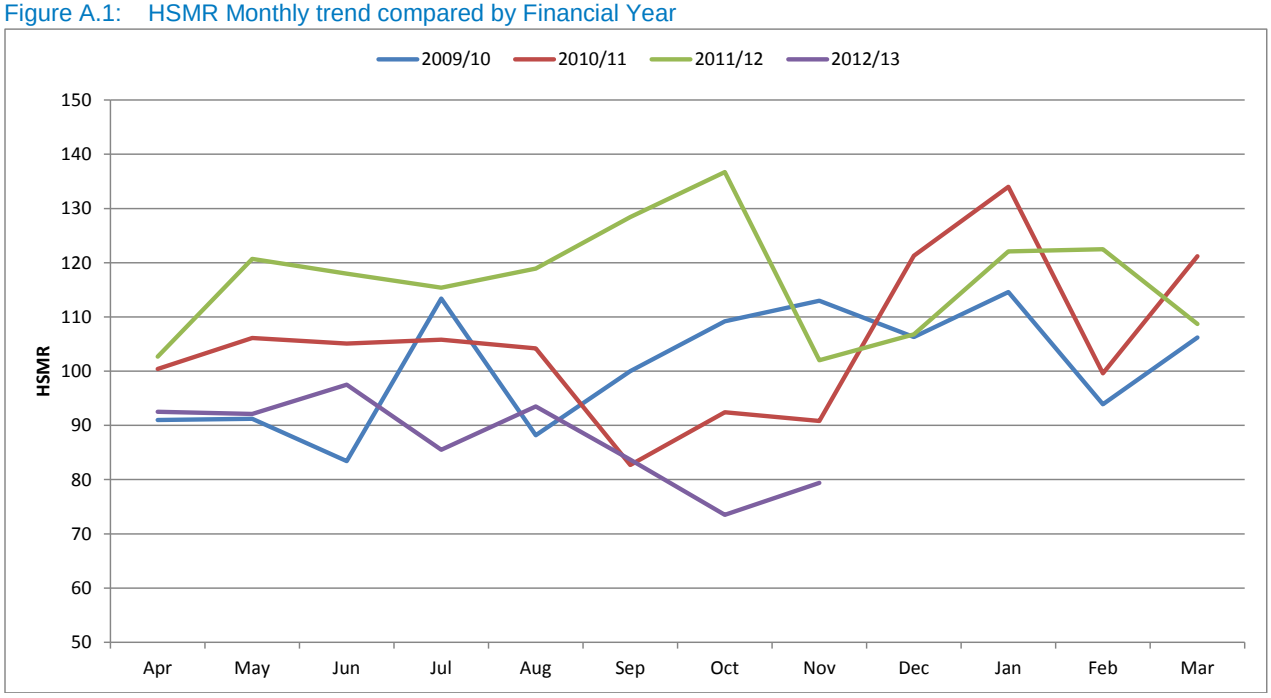
There are many factors in the population and structure of services in Walsall borough that will put increased strain on Walsall NHS Trust. These include: poor life expectancy, high prevalence rates of chronic conditions and smoking, patient preference to engage with secondary care (A&E / OOH) in place of primary care, low historic educational attainment, high rates of deprivation, limited access to end-of-life support and care in the community (including residential and nursing homes) and both short and long term unemployment. The overall ill health in the local population adds further pressures on the Manor Hospital and very likely increases the morbidity and mortality of patients in the Trust.

Appendices

Appendix A. Additional HSMR analysis

Year on year trends for global hospital level HSMR shows 2009/10 and 2010/11 to largely overlap with an increasing trend from November 2010 through to November 2011, before the lines cross again with 2012/13 being at or below the long run average.

Figure A.1: HSMR Monthly trend compared by Financial Year



Source: Dr Foster Intelligence

A.1.1. HSMR by Condition Group

In accordance with NHS information governance requirements all absolute values less than 6 are suppressed.

When analysing HSMR by specific condition groups, some have higher HSMRs than others. It should be cautioned however that the assignment of a record into a specific diagnosis groups is dependent on accurate coding of underlying primary diagnosis.

It should also be noted that some of the large HSMRs are due to the relatively few cases in the specified diagnosis group.

The following table provides a breakdown of activity, actual and expected mortality for each of the 56 CCS groups included in the HSMR methodology.

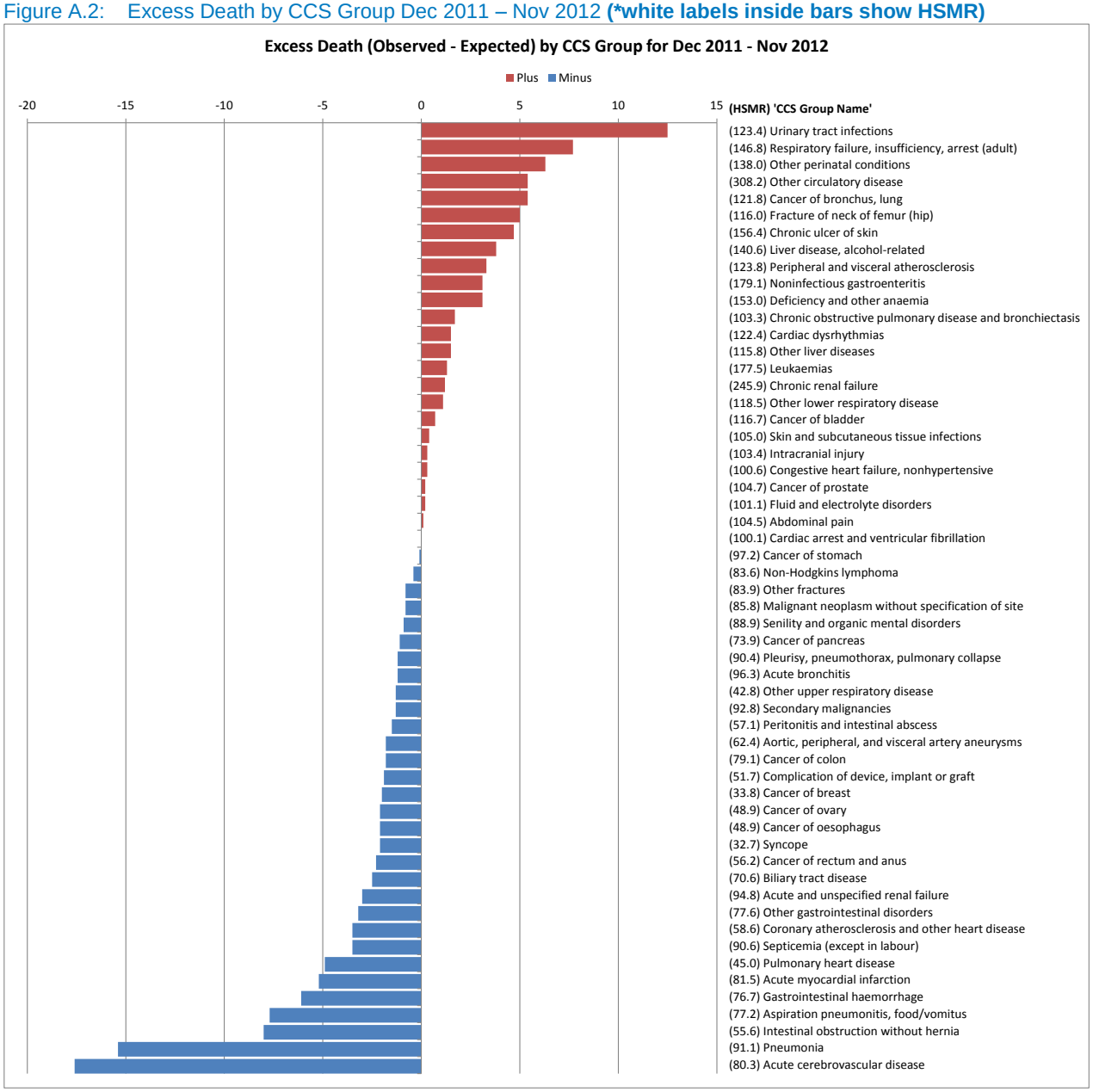
Table A.1: HSMR by 56 CCS Groups Dec 2011 – Nov 2012

Diagnosis group	Spells	Super spells	% of all	Deaths		Expected		RR	Low	High
				No.	%	No.	%			
ALL	20492	20385	100.0 %	970	4.8%	1006.6	4.9%	96.4	90.4	102.6
Other gastrointestinal disorders	1291	1289	6.3%	11	0.9%	14.2	1.1%	77.6	38.7	138.8
Cancer of breast	1219	1219	6.0%	*	*	*	*	33.8	0.4	188.1
Urinary tract infections	**1086**	**1078**	**5.3%**	**66**	**6.1%**	**53.5**	**5.0%**	**123.4**	**95.4**	**157**
Abdominal pain	**1003**	**1003**	**4.9%**	*	*	*	*	**104.5**	**21**	**305.3**
Deficiency and other anaemia	**994**	**994**	**4.9%**	**9**	**0.9%**	**5.9**	**0.6%**	**153**	**69.8**	**290.6**
Coronary atherosclerosis and other heart disease	883	880	4.3%	*	*	8.5	1.0%	58.6	18.9	136.8
Pneumonia	880	864	4.2%	157	18.2%	172.4	20.0%	91.1	77.4	106.5
Chronic obstructive pulmonary disease and bronchiectasis	**835**	**831**	**4.1%**	**54**	**6.5%**	**52.3**	**6.3%**	**103.3**	**77.6**	**134.8**
Acute bronchitis	814	806	4.0%	31	3.8%	32.2	4.0%	96.3	65.4	136.7
Biliary tract disease	793	792	3.9%	6	0.8%	8.5	1.1%	70.6	25.8	153.6
Cardiac dysrhythmias	**576**	**573**	**2.8%**	**8**	**1.4%**	**6.5**	**1.1%**	**122.4**	**52.7**	**241.3**
Gastrointestinal haemorrhage	567	561	2.8%	20	3.6%	26.1	4.6%	76.7	46.9	118.5
Other perinatal conditions	**520**	**518**	**2.5%**	**23**	**4.4%**	**16.7**	**3.2%**	**138**	**87.4**	**207**
Cancer of bronchus, lung	**518**	**517**	**2.5%**	**30**	**5.8%**	**24.6**	**4.8%**	**121.8**	**82.2**	**173.9**
Skin and subcutaneous tissue infections	**489**	**487**	**2.4%**	**8**	**1.6%**	**7.6**	**1.6%**	**105**	**45.2**	**206.8**
Acute cerebrovascular disease	475	468	2.3%	72	15.4%	89.6	19.2%	80.3	62.9	101.2
Other upper respiratory disease	442	438	2.1%	*	*	*	*	42.8	0.6	238.1
Leukaemias	**424**	**424**	**2.1%**	*	*	*	*	**177.5**	**35.7**	**518.7**
Cancer of bladder	**364**	**364**	**1.8%**	*	*	*	*	**116.7**	**37.6**	**272.2**
Congestive heart failure, nonhypertensive	**362**	**356**	**1.7%**	**53**	**14.9%**	**52.7**	**14.8%**	**100.6**	**75.3**	**131.5**
Syncope	343	343	1.7%	*	*	*	*	32.7	0.4	181.9
Fracture of neck of femur (hip)	**320**	**320**	**1.6%**	**36**	**11.3%**	**31**	**9.7%**	**116**	**81.2**	**160.6**
Cancer of ovary	314	314	1.5%	*	*	*	*	48.9	5.5	176.4
Complication of device, implant or graft	310	309	1.5%	*	*	*	*	51.7	5.8	186.8
Secondary malignancies	305	303	1.5%	17	5.6%	18.3	6.0%	92.8	54	148.6
Other lower respiratory disease	**290**	**290**	**1.4%**	**7**	**2.4%**	**5.9**	**2.0%**	**118.5**	**47.5**	**244.1**
Cancer of colon	278	278	1.4%	7	2.5%	8.8	3.2%	79.1	31.7	163
Acute myocardial infarction	270	267	1.3%	23	8.6%	28.2	10.6%	81.5	51.7	122.4
Acute and unspecified renal failure	268	266	1.3%	55	20.7%	58	21.8%	94.8	71.4	123.4
Cancer of prostate	**243**	**243**	**1.2%**	*	*	*	*	**104.7**	**28.2**	**268.1**
Cancer of rectum and anus	240	239	1.2%	*	*	*	*	56.2	11.3	164.2
Non-Hodgkins lymphoma	239	237	1.2%	*	*	*	*	83.6	9.4	301.8
Fluid and electrolyte disorders	**236**	**234**	**1.1%**	**17**	**7.3%**	**16.8**	**7.2%**	**101.1**	**58.9**	**161.9**
Noninfectious gastroenteritis	**206**	**205**	**1.0%**	**7**	**3.4%**	**3.9**	**1.9%**	**179.1**	**71.8**	**369.1**
Other liver diseases	**174**	**172**	**0.8%**	**11**	**6.4%**	**9.5**	**5.5%**	**115.8**	**57.7**	**207.2**
Pleurisy, pneumothorax, pulmonary collapse	170	169	0.8%	11	6.5%	12.2	7.2%	90.4	45.1	161.8
Intestinal obstruction without hernia	164	164	0.8%	10	6.1%	18	11.0%	55.6	26.6	102.2
Septicemia (except in labour)	152	151	0.7%	34	22.5%	37.5	24.8%	90.6	62.8	126.7
Other circulatory disease	**148**	**146**	**0.7%**	**8**	**5.5%**	**2.6**	**1.8%**	**308.2**	**132.7**	**607.3**
Cancer of oesophagus	131	130	0.6%	*	*	*	*	48.9	5.5	176.5
Senility and organic mental disorders	124	123	0.6%	7	5.7%	7.9	6.4%	88.9	35.6	183.2
Pulmonary heart disease	120	120	0.6%	*	*	8.9	7.4%	45	12.1	115.2
Other fractures	115	111	0.5%	*	*	*	*	83.9	22.6	214.8
Peripheral and visceral atherosclerosis	**114**	**113**	**0.6%**	**17**	**15.0%**	**13.7**	**12.2%**	**123.8**	**72.1**	**198.2**
Cancer of pancreas	105	105	0.5%	*	*	*	*	73.9	14.9	216
Aspiration pneumonitis, food/vomitus	99	95	0.5%	26	27.4%	33.7	35.5%	77.2	50.4	113.1
Cancer of stomach	96	96	0.5%	*	*	*	*	97.2	26.1	248.8
Chronic ulcer of skin	**89**	**89**	**0.4%**	**13**	**14.6%**	**8.3**	**9.3%**	**156.4**	**83.2**	**267.5**
Respiratory failure, insufficiency, arrest (adult)	**60**	**59**	**0.3%**	**24**	**40.7%**	**16.3**	**27.7%**	**146.8**	**94.1**	**218.5**
Malignant neoplasm without specification of site	59	59	0.3%	*	*	*	*	85.8	27.7	200.3
Liver disease, alcohol-related	**53**	**53**	**0.3%**	**13**	**24.5%**	**9.2**	**17.4%**	**140.6**	**74.8**	**240.5**
Intracranial injury	**49**	**48**	**0.2%**	**9**	**18.8%**	**8.7**	**18.1%**	**103.4**	**47.2**	**196.3**
Aortic, peripheral, and visceral	38	38	0.2%	*	*	*	*	62.4	12.5	182.3

artery aneurysms										
Cardiac arrest and ventricular fibrillation	**15**	**14**	**0.1%**	**9**	**64.3%**	**9**	**64.2%**	**100.1**	**45.7**	**190**
Peritonitis and intestinal abscess	13	13	0.1%	*	*	*	*	57.1	6.4	206
Chronic renal failure	**7**	**7**	**0.0%**	*	*	*	*	**245.9**	**27.6**	**887.8**

Source: Dr Foster Intelligence *Data suppressed due to low counts

Figure A.2: Excess Death by CCS Group Dec 2011 – Nov 2012 **(*white labels inside bars show HSMR)**



Source: Dr Foster Intelligence

The five groups highlighted in red below show the highest absolute change in terms of excess death between 2010/11 and 2011/12.

A.1.2. Speciality

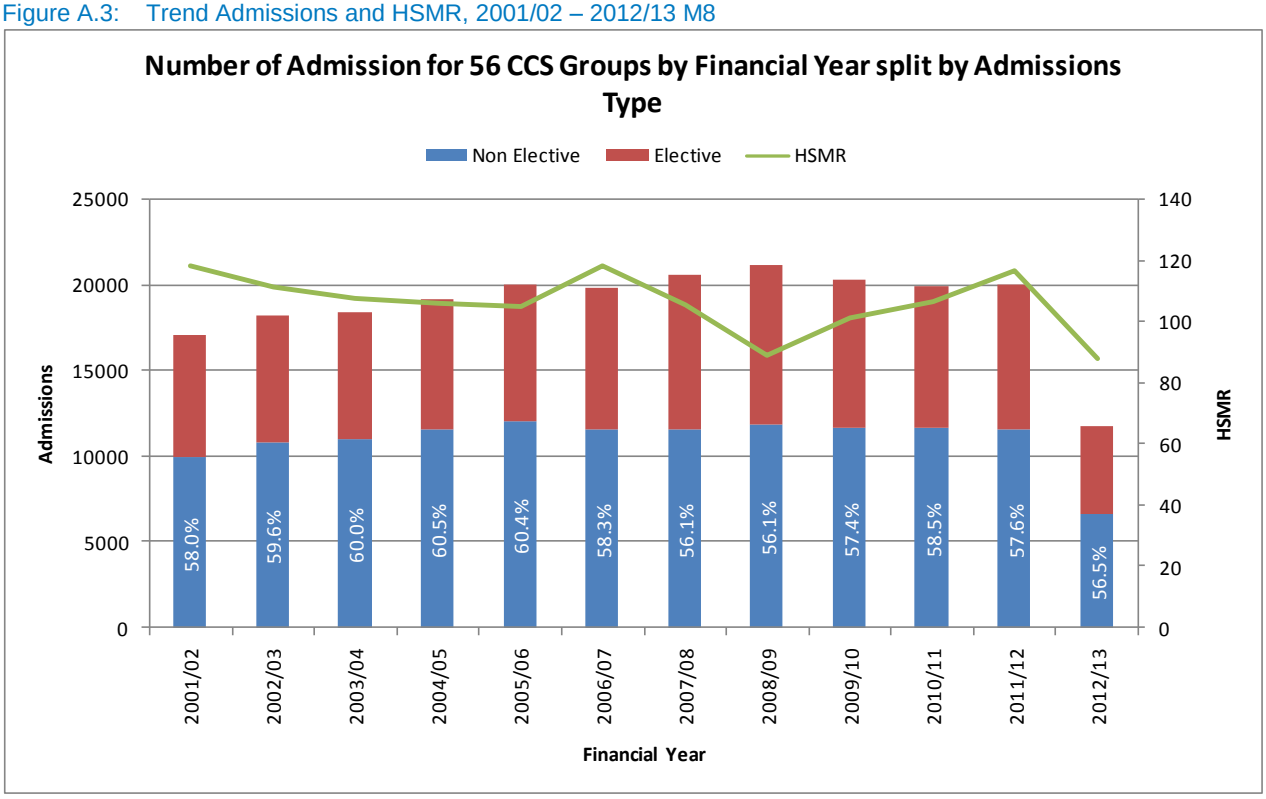
Table A.2: HSMR (56 CCS Groups) by Specialty for Dec 2011 – Nov 2012

		Super		Deaths		Expected				
Specialty	Spells	spells	% of all	No.	%	No.	%	RR	Low	High
ALL	20492	20385	100.0%	970	4.8%	1006.6	4.9%	96.4	90.4	102.6
General Medicine	7271	7230	35.5%	568	7.9%	558.6	7.7%	101.7	93.5	110.4
General Surgery	3231	3227	15.8%	53	1.6%	88.1	2.7%	60.2	45.1	78.7
Medical Oncology	2704	2704	13.3%	*	*	*	*	1047.7	13.7	5829
Geriatric Medicine	1738	1716	8.4%	224	13.1 %	211.7	12.3%	105.8	92.4	120.6
Cardiology	1433	1424	7.0%	18	1.3%	39.1	2.7%	46	27.2	72.7
Clinical Haematology	879	877	4.3%	*	*	*	*	209.4	2.7	1165.2
Paediatrics	794	781	3.8%	*	*	*	*	190.1	51.1	486.7
Trauma & Orthopaedics	559	555	2.7%	44	7.9%	37.6	6.8%	117	85	157.1
Urology	447	447	2.2%	*	*	*	*	54.6	6.1	197.2
ENT	321	316	1.6%	*	*	*	*	0	0	406.3
Diabetic Medicine	275	271	1.3%	26	9.6%	35.7	13.2%	72.9	47.6	106.9
Gynaecology	249	249	1.2%	*	*	*	*	34	3.8	122.8
Well Babies	249	249	1.2%	19	7.6%	12.2	4.9%	156.1	93.9	243.7
Neonatology	127	127	0.6%	*	*	*	*	55.8	6.3	201.5
Colorectal Surgery	112	112	0.5%	0	0.0%	0	0.0%	0	0	227832.1
Intermediate Care	37	34	0.2%	*	*	*	*	34	0.4	189
Respiratory Medicine	24	24	0.1%	*	*	*	*	50.8	0.7	282.9
Rheumatology	12	12	0.1%	*	*	*	*	-	0	0
Accident & Emergency	9	9	0.0%	*	*	*	*	271	54.5	791.7
Obstetrics	7	7	0.0%	*	*	*	*	0	0	1575.3
Midwife Episode	*	*	0.0%	*	*	*	*	443.5	5.8	2467.5
Rehabilitation	*	*	0.0%	*	*	*	*	0	0	791.6
Dermatology	*	*	0.0%	0	0.0%	0	0.7%	0	0	18461.4
Pain Management	*	*	0.0%	0	0.0%	0	0.0%	-	0	0
Ophthalmology	*	*	0.0%	0	0.0%	0	0.0%	-	0	0

Source: Dr Foster Intelligence *Data suppressed due to low counts

A.1.3. Process

Figure A.3: Trend Admissions and HSMR, 2001/02 – 2012/13 M8



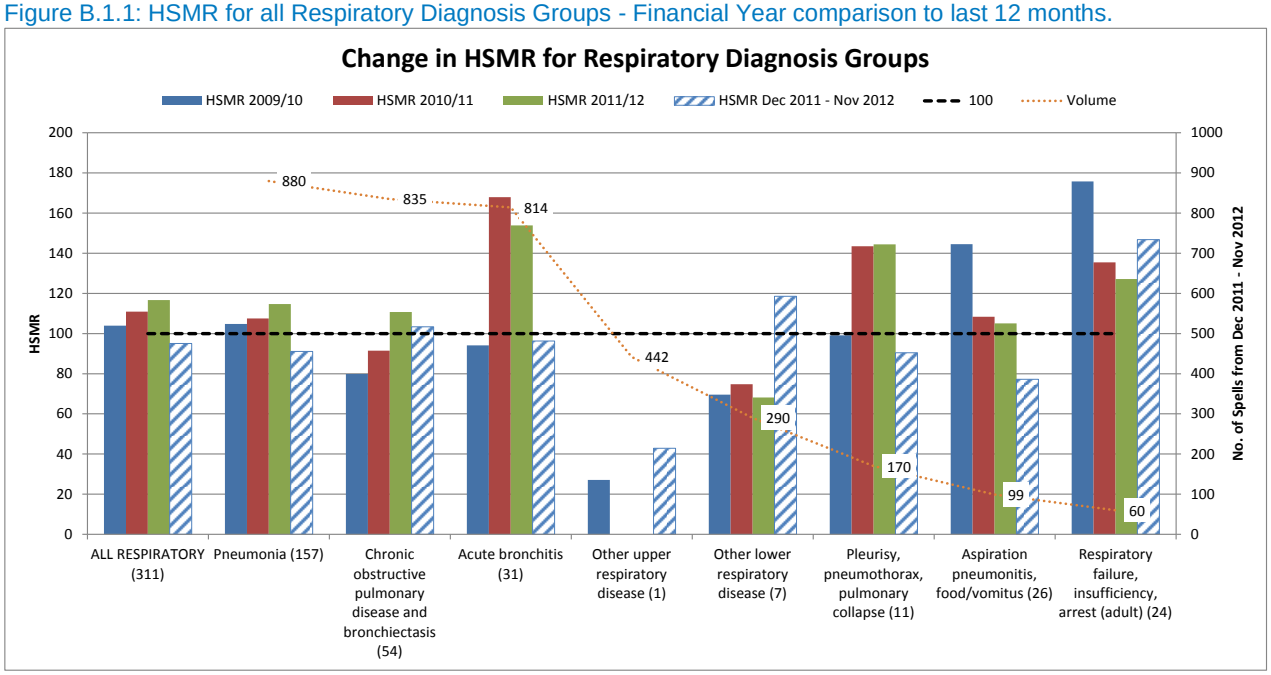
Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov

Appendix B. Deep dive clinical areas

B.1. Respiratory

The top three diagnosis groups within the respiratory chapter are Pneumonia, COPD and Acute Bronchitis. All of these groups have been showing a continuous rise in HSMR between 2009/10 and 2011/12 Acute Bronchitis has been showing the highest HSMR in 2010/11 and 2011/12 of 170 and 150 respectively, after then dropping to around about a 100.

Figure B.1.1: HSMR for all Respiratory Diagnosis Groups - Financial Year comparison to last 12 months.



Source: Dr Foster Intelligence

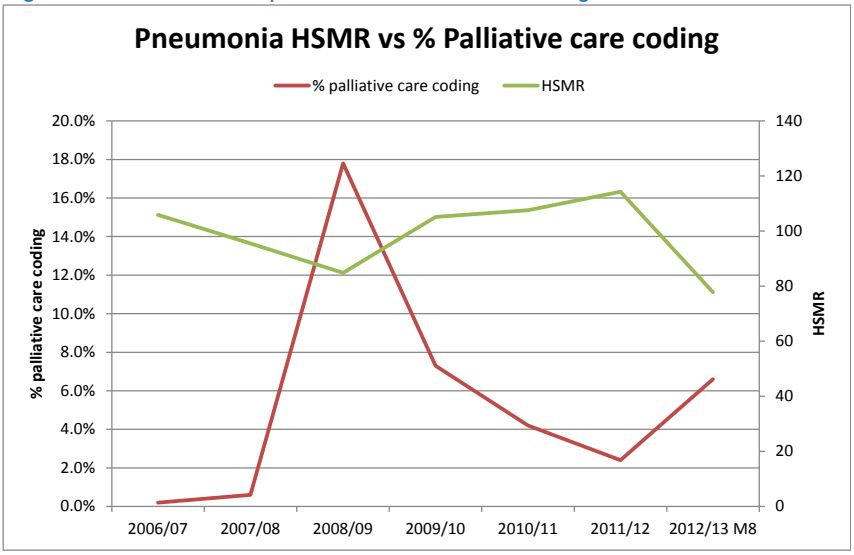
B.1.1. Pneumonia

Table B.1.1: Pneumonia: % palliative care coding and HSMR

Financial Year	Paliative care spells	% palliative care coding	HSMR Pneumonia
2006/07	<6	0.2%	105.9
2007/08	<6	0.6%	95.5
2008/09	126	17.8%	84.8
2009/10	62	7.3%	105.1
2010/11	45	4.2%	107.6
2011/12	23	2.4%	114.3
2012/13 M8	35	6.6%	77.8

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Figure B.1.2: HSMR compared to Palliative care coding: Pneumonia



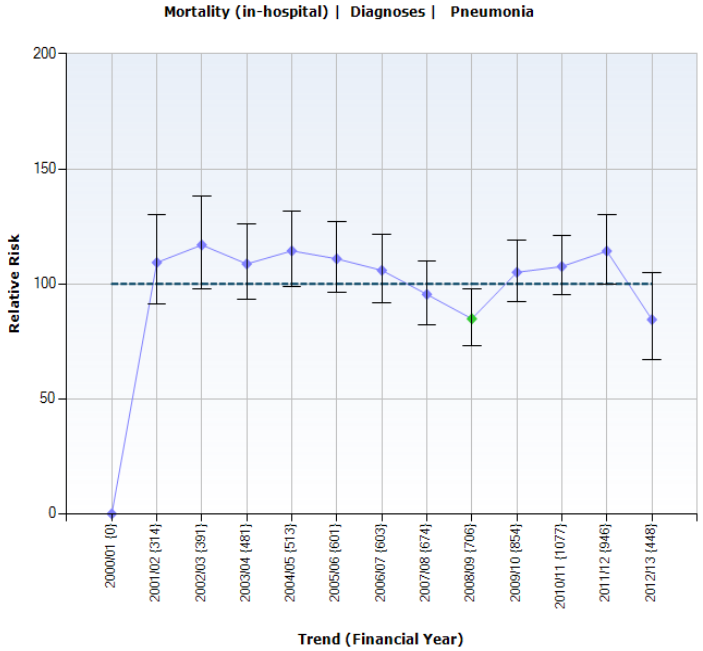
Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Table B.1.2: Peer group comparison HSMR for Pneumonia, West Midlands Trust Only

West Midlands NHS Trusts	2008_09	2009_10	2010_11	2011_12	2012_13 M10	Dec 2011 - Nov 2012
University Hospitals Birmingham NHS Foundation Trust	105.1	113.4	112.9	117.5	93.4	108.7
Burton Hospitals NHS Foundation Trust	90.2	111.7	94.4	113.3	105.2	107.6
University Hospitals Coventry and Warwickshire NHS Trust	108.6	95.9	106.5	115.4	97.7	103.4
Worcestershire Acute Hospitals NHS Trust	105.9	101.3	113.4	109.6	100.2	103
Mid Staffordshire NHS Foundation Trust	78.2	54.1	78.6	84.4	101.3	101.7
The Royal Wolverhampton NHS Trust	124	135.7	123.3	105.8	102.1	101.5
George Eliot Hospital NHS Trust	109.2	100.2	100	116.7	97.5	101.5
Wye Valley NHS Trust	90.2	105.2	95.3	91.9	110.9	98.9
Sandwell and West Birmingham Hospitals NHS Trust	113.1	98.6	117.5	107.6	86.6	97.8
South Warwickshire NHS Foundation Trust	94.5	94.2	80.1	96.5	89.7	95.5
Shrewsbury and Telford Hospital NHS Trust	101.6	121.4	127.1	105.1	86.6	95.3
University Hospital Of North Staffordshire NHS Trust	90.3	94.7	101.9	104.4	90.6	94.5
Walsall Healthcare NHS Trust	***84.9***	***105.1***	***107.5***	***114.3***	***77.8***	***91.2***
The Dudley Group NHS Foundation Trust	111.3	122.2	111.3	102.4	80.8	81.1
Heart Of England NHS Foundation Trust	94.5	90.7	96.3	86.1	80.4	81

Source: Dr Foster Intelligence

Table B.1.3: Acute Bronchitis: % palliative care coding and HSMR



Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

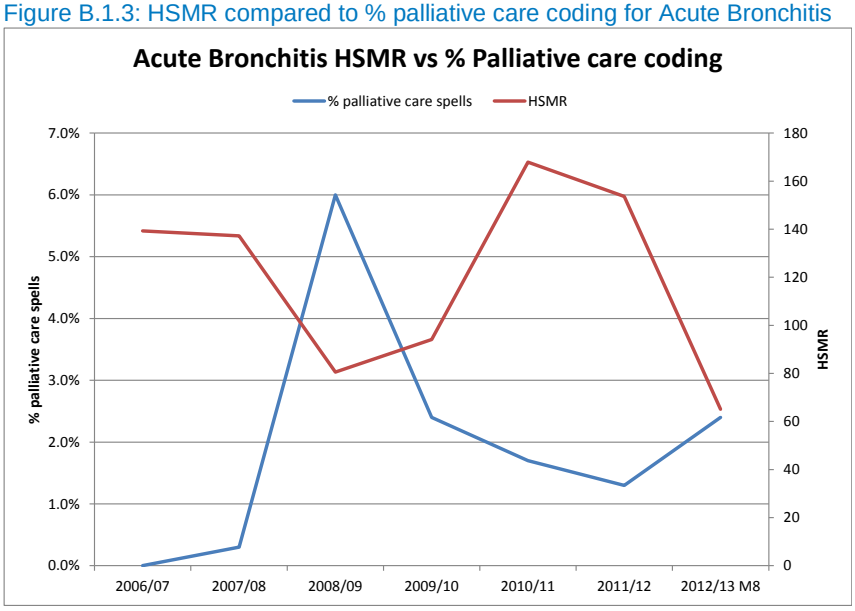
B.1.2. Acute Bronchitis

Table B.1.4: Acute Bronchitis: % palliative care coding and HSMR

Financial Year	Palliative Care Spells	% Palliative Care Spells	HSMR Acute Bronchitis
2006/07	<6	0.0%	139.3
2007/08	<6	0.3%	137.2
2008/09	51	6.0%	80.6
2009/10	18	2.4%	94.1
2010/11	12	1.7%	167.9
2011/12	9	1.3%	153.6
2012/13 M8	11	2.4%	65.1

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Figure B.1.3: HSMR compared to % palliative care coding for Acute Bronchitis



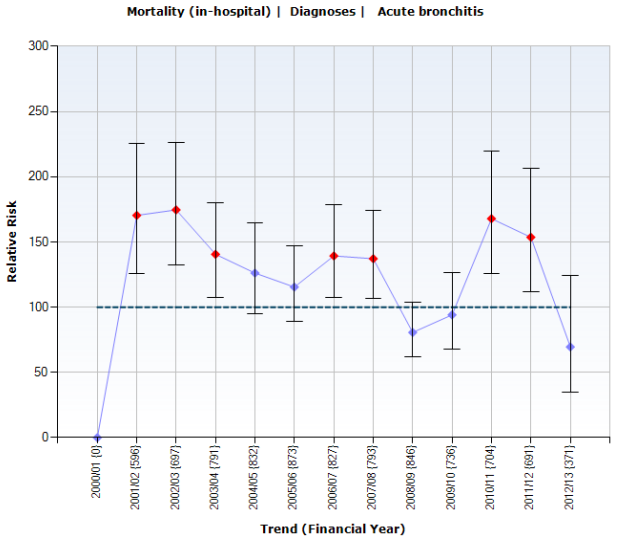
Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Table B.1.5: Peer group comparison HSMR for Acute Bronchitis, West Midlands Trust Only

West Midlands NHS Trusts	2008/09	2009/10	2010/11	2011/12	2012/13 M10	Dec 2011 - Nov 2012
Wye Valley NHS Trust	126.4	91	115.2	106.2	107.8	125.1
The Royal Wolverhampton NHS Trust	101.2	113.6	150.4	126.8	76.9	104.4
Mid Staffordshire NHS Foundation Trust	23.9	36.1	51.3	69.9	117.4	103.5
Worcestershire Acute Hospitals NHS Trust	113	99.5	145.4	134.4	82.4	97.1
University Hospitals Birmingham NHS Foundation Trust	120.3	124.6	66	140.4	94.8	96.8
Burton Hospitals NHS Foundation Trust	75.2	110.6	168.7	94.8	91.4	96.3
Walsall Healthcare NHS Trust	***80.6***	***94.1***	***168***	***153.7***	***65.1***	***96.3***
Heart Of England NHS Foundation Trust	102.4	86.8	80.7	71.1	113.9	93.3
The Dudley Group NHS Foundation Trust	126.3	127.5	104.1	89.9	79	81.6
University Hospital Of North Staffordshire NHS Trust	90.6	99.3	118.8	95.4	70	79.5
Shrewsbury and Telford Hospital NHS Trust	56.5	97.4	111	88.3	67	74.6
Sandwell and West Birmingham Hospitals NHS Trust	87.8	97.1	67.2	77.9	70.9	70.7
University Hospitals Coventry and Warwickshire NHS Trust	116	111.9	73.3	80.1	63.1	64.2
George Eliot Hospital NHS Trust	85.4	112.5	172.2	119.1	35.6	52.8
South Warwickshire NHS Foundation Trust	136.4	107.5	115.7	71.2	34.1	43.3

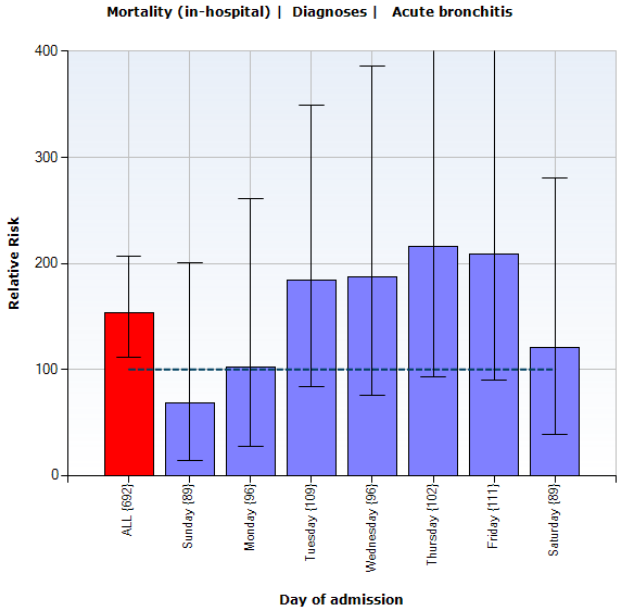
Source: Dr Foster Intelligence

Figure B.1.4: Acute Bronchitis by Day of Admission 2011/12



Source: Dr Foster Intelligence

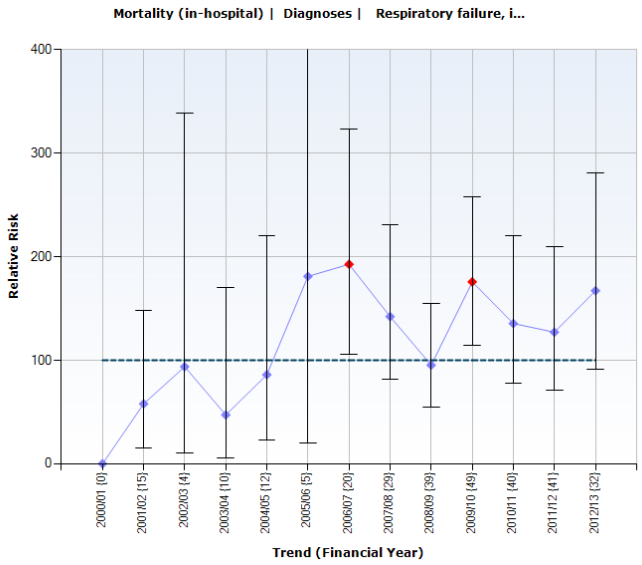
Figure B.1.5: Acute Bronchitis by Day of Admission 2011/12



Source: Dr Foster Intelligence

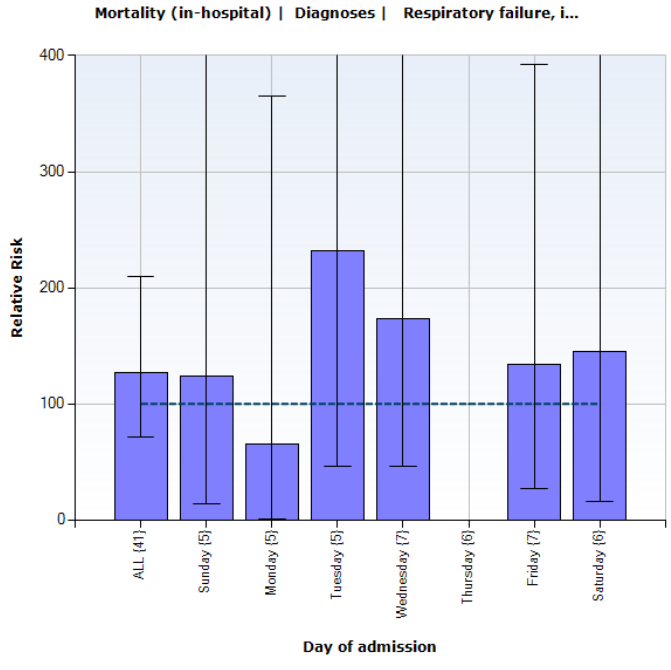
B.1.3. Respiratory Failure

Figure B.1.6: Admissions Respiratory Failure by Day of the week, 2011/12



Source: Dr Foster Intelligence

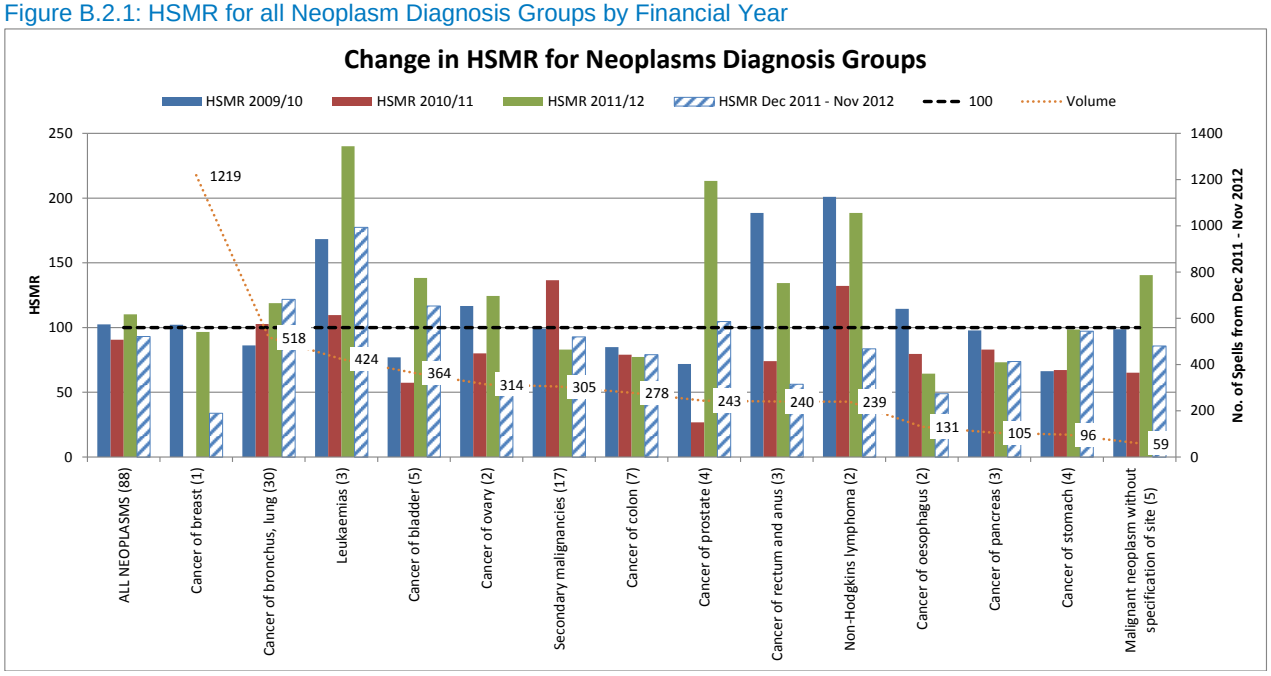
Figure B.1.7: Admissions Respiratory Failure by Day of the week, 2011/12



Source: Dr Foster Intelligence

B.2. Neoplasm Diagnosis Groups

Figure B.2.1: HSMR for all Neoplasm Diagnosis Groups by Financial Year



Source: Dr Foster Intelligence

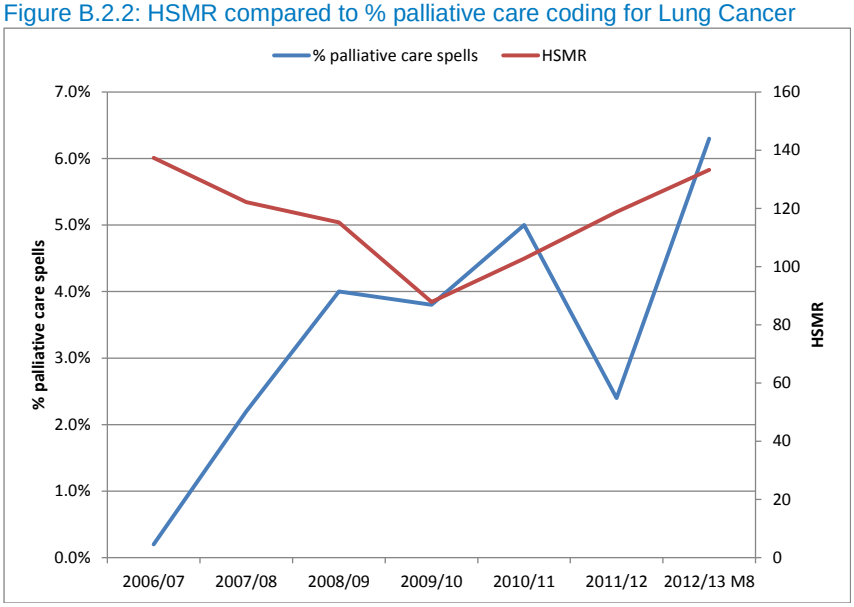
B.2.1. Lung cancer

Table B.2.1: Lung cancer: % palliative care coding and HSMR

Financial Year	Palliative care Spells	% palliative care spells	HSMR Lung Cancer
2006/07	<6	0.2%	137.4
2007/08	15	2.2%	122.2
2008/09	26	4.0%	115.2
2009/10	25	3.8%	87.9
2010/11	26	5.0%	102.8
2011/12	11	2.4%	118.8
2012/13 M8	22	6.3%	133.3

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Figure B.2.2: HSMR compared to % palliative care coding for Lung Cancer



Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

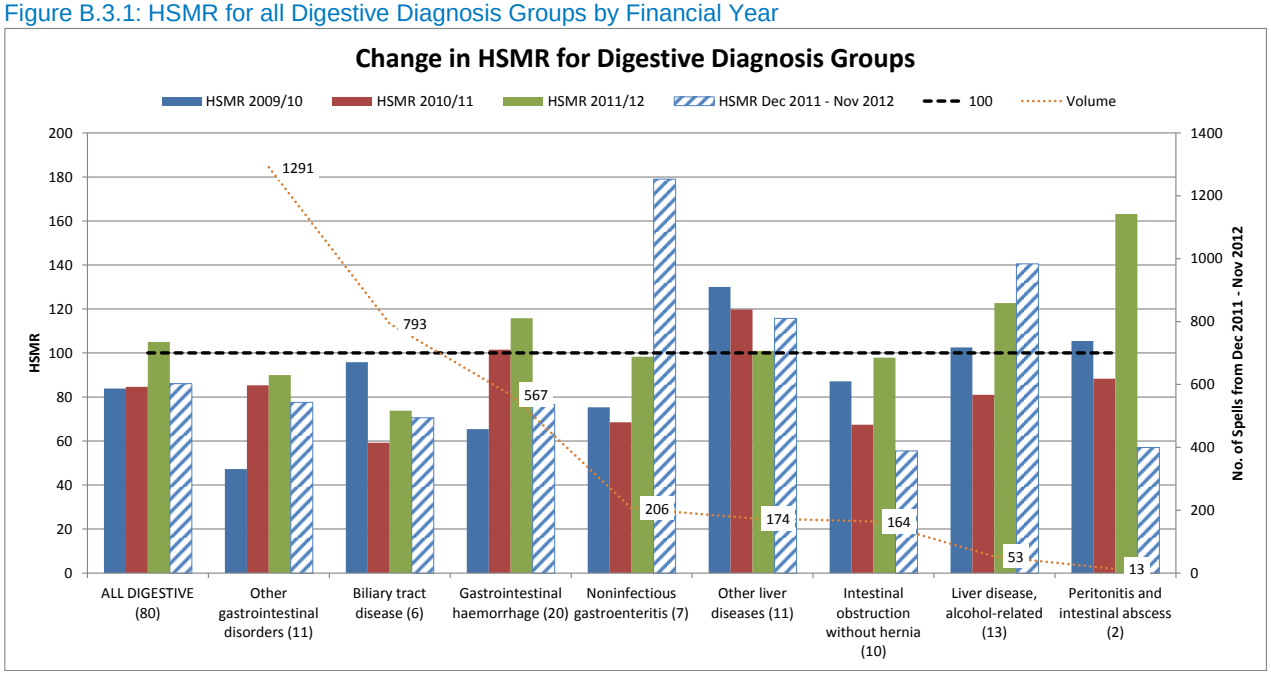
Table B.2.2: Peer group comparison HSMR for Lung Cancer, West Midlands Trust Only

West Midlands NHS Trusts	2008/09	2009/10	2010/11	2011/12	2012/13 M9	Dec 2011 - Nov 2012
The Dudley Group NHS Foundation Trust	140.5	138.9	178.3	204.6	152.9	154.6
George Eliot Hospital NHS Trust	108.4	108.3	129.6	148.1	153	151.8
Burton Hospitals NHS Foundation Trust	96.7	122.3	152	120.3	129.9	137.4
Walsall Healthcare NHS Trust	***113.7***	***86.2***	***102.8***	***118.8***	***133.3***	***119.6***
University Hospital Of North Staffordshire NHS Trust	115.1	130.1	173.2	146.1	106.2	118.5
University Hospitals Birmingham NHS Foundation Trust	73.4	70.2	74.8	89	108.7	109.8
South Warwickshire NHS Foundation Trust	162	132.3	102.2	83.2	96.7	106.4
University Hospitals Coventry and Warwickshire NHS Trust	109	126.3	107.3	115.8	92.1	97.7
Heart Of England NHS Foundation Trust	93.2	87.8	75.2	113.7	97.3	95.3
Sandwell and West Birmingham Hospitals NHS Trust	137.6	119.8	132.9	101.6	101.1	91.4
Worcestershire Acute Hospitals NHS Trust	124.3	118.3	105.9	105.6	93.8	90.4
The Royal Wolverhampton NHS Trust	106.9	101	108.3	91.9	84.8	82.9
Shrewsbury and Telford Hospital NHS Trust	90.9	133.3	108.5	79.7	59.9	70.3
Wye Valley NHS Trust	124.1	67.6	51.2	72.2	76.7	68.8
Mid Staffordshire NHS Foundation Trust	113.4	104.8	125.8	94.5	63.3	62

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

B.3. Digestive Diagnosis Groups

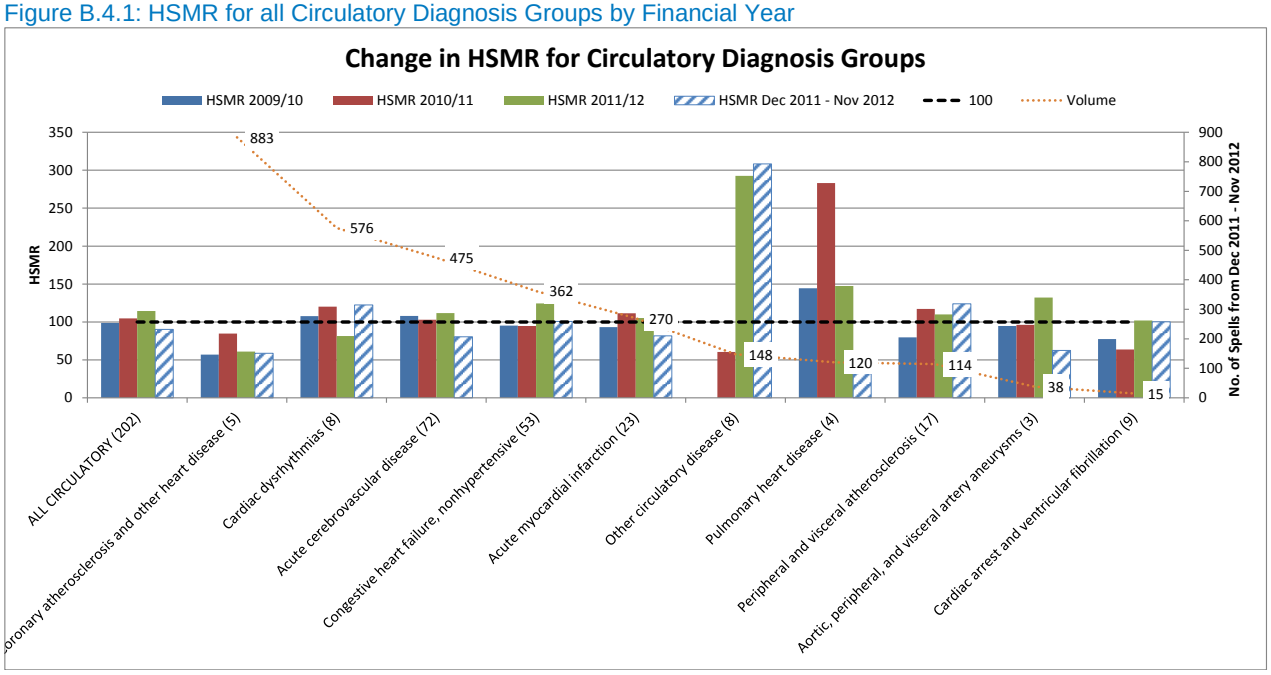
Figure B.3.1: HSMR for all Digestive Diagnosis Groups by Financial Year



Source: Dr Foster Intelligence

B.4. Circulatory Diagnosis Groups

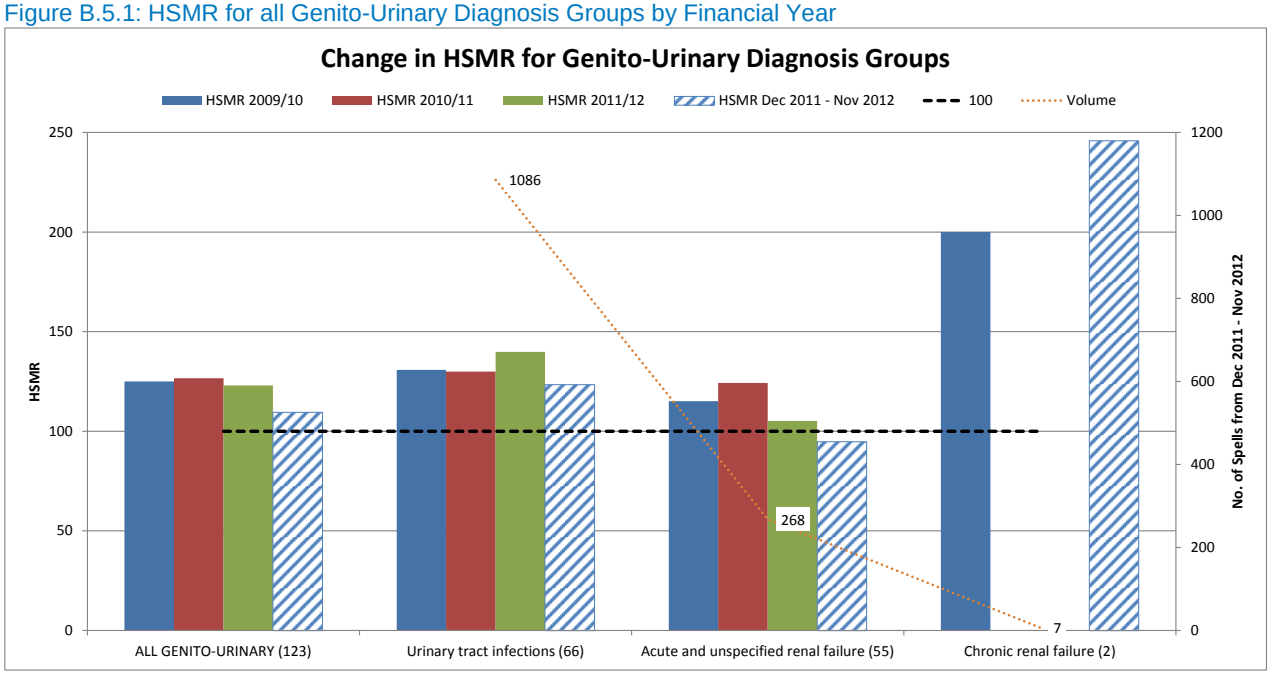
Figure B.4.1: HSMR for all Circulatory Diagnosis Groups by Financial Year



Source: Dr Foster Intelligence

B.5. Genito-Urinary Diagnosis Groups

Figure B.5.1: HSMR for all Genito-Urinary Diagnosis Groups by Financial Year



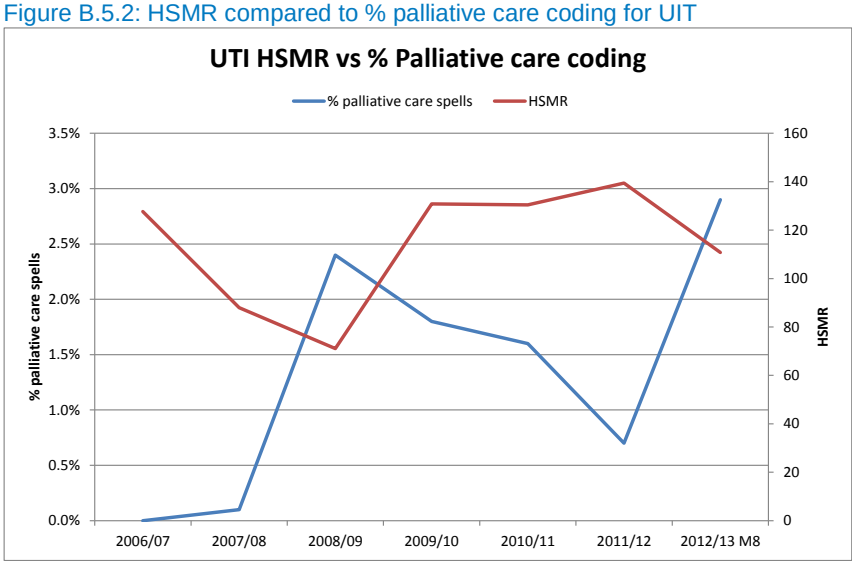
Source: Dr Foster Intelligence

Table B.5.1: UTI: % palliative care coding and HSMR

Financial Year	Palliative care spells	% palliative care spells	HSMR UTI
2006/07	<6	0.0%	127.7
2007/08	<6	0.1%	88
2008/09	23	2.4%	71.1
2009/10	17	1.8%	130.8
2010/11	18	1.6%	130.4
2011/12	7	0.7%	139.4
2012/13 M8	23	2.9%	110.8

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Figure B.5.2: HSMR compared to % palliative care coding for UIT



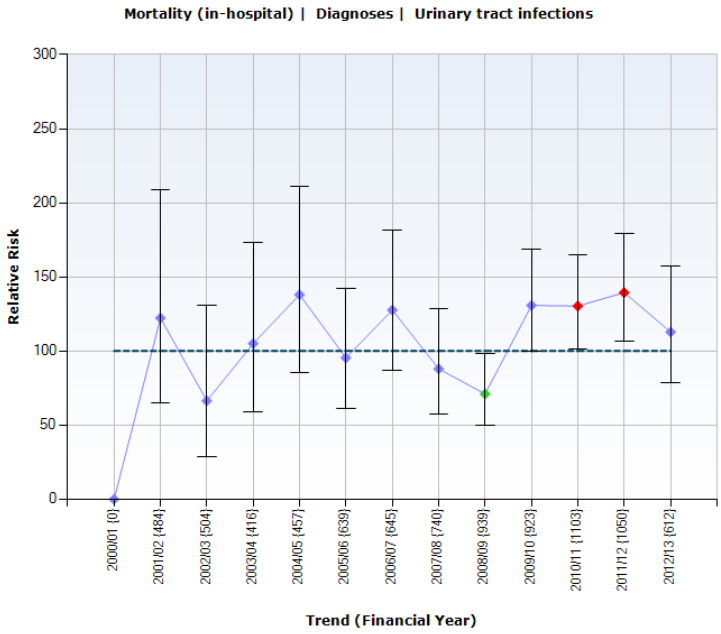
Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

Table B.5.2: Peer group comparison HSMR for UTI, West Midlands Trust Only

West Midlands NHS Trusts	2008/09	2009/10	2010/11	2011/12	2012/13 M10	Dec 2011 - Nov 2012
University Hospitals Coventry and Warwickshire NHS Trust	80	75.8	86.2	126.5	116	124.8
Shrewsbury and Telford Hospital NHS Trust	76	123.2	109.3	106.5	126.7	123
Walsall Healthcare NHS Trust	***71.1***	***130.8***	***130.4***	***139.4***	***110.8***	***122***
George Eliot Hospital NHS Trust	81.2	116.5	137.9	151.1	93.3	116.5
South Warwickshire NHS Foundation Trust	110	145.8	75.4	97.5	120	108.1
University Hospital Of North Staffordshire NHS Trust	89.4	88.2	123.7	105.4	91.8	98.8
Worcestershire Acute Hospitals NHS Trust	94.8	98.5	116.3	102.2	101.1	95.6
The Royal Wolverhampton NHS Trust	87.5	122.7	108.4	104.7	95.2	95.5
Sandwell and West Birmingham Hospitals NHS Trust	110.3	120	112.3	120.6	88.2	92.8
University Hospitals Birmingham NHS Foundation Trust	109.4	93.5	113.8	111.4	91.5	91
The Dudley Group NHS Foundation Trust	100.3	143.8	145.4	92	76	80.2
Wye Valley NHS Trust	133.4	141.5	101.4	131.2	79.6	76
Heart Of England NHS Foundation Trust	134.2	96.4	82.5	84.6	69.2	73.8
Burton Hospitals NHS Foundation Trust	93.4	110.7	99.3	65.9	46.6	50.6
Mid Staffordshire NHS Foundation Trust	5.6	12.3	20.5	42.6	52.2	48.7

Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

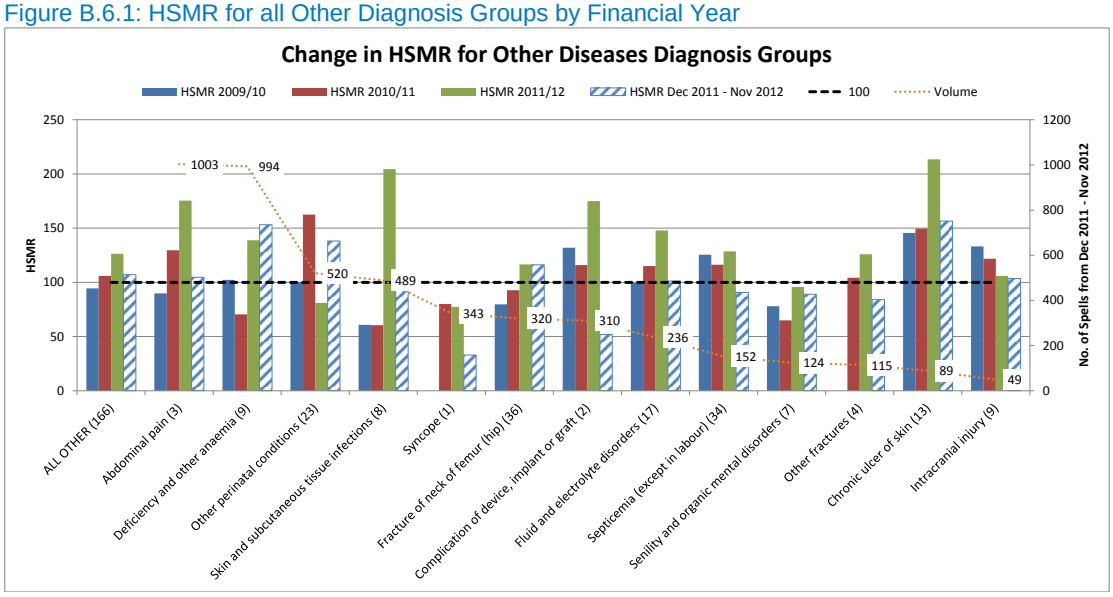
Figure B.5.3: HSMR compared to % palliative care coding for UTI



Source: Dr Foster Intelligence NB 2012/13 only includes data to Nov.

B.6. Other Diagnosis Groups

Figure B.6.1: HSMR for all Other Diagnosis Groups by Financial Year

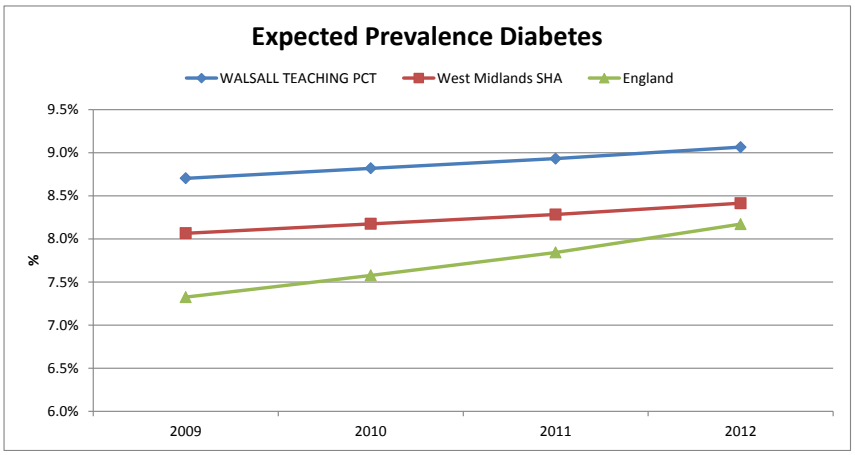


Source: Dr Foster Intelligence

Appendix C. Supplemental external factor information

C.1. Long term condition expected prevalence rates

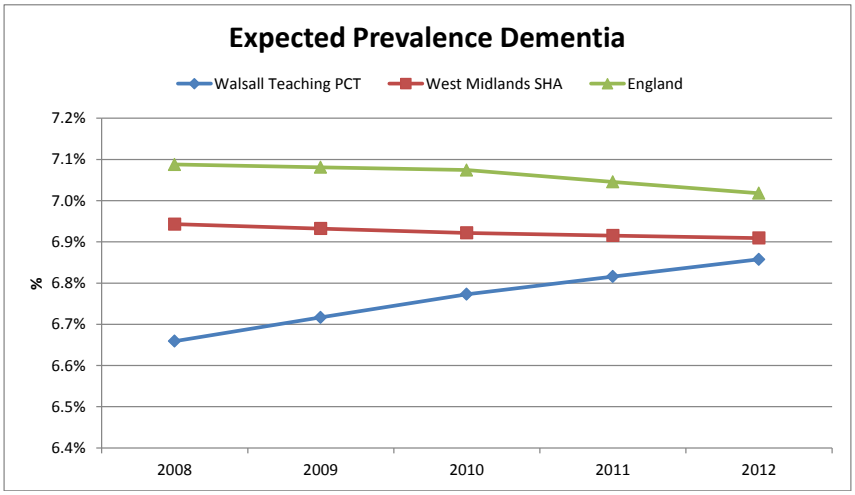
Figure C.1: Expected Prevalence of Diabetes in Walsall Teaching PCT 2009/12



Source: APHO, December 2011

Expected prevalence levels for Dementia are lower for the PCT than those of England and the West Midlands region. However levels have increased steadily over the past 4 years, in contrast to England and the West Midlands where levels have fallen.

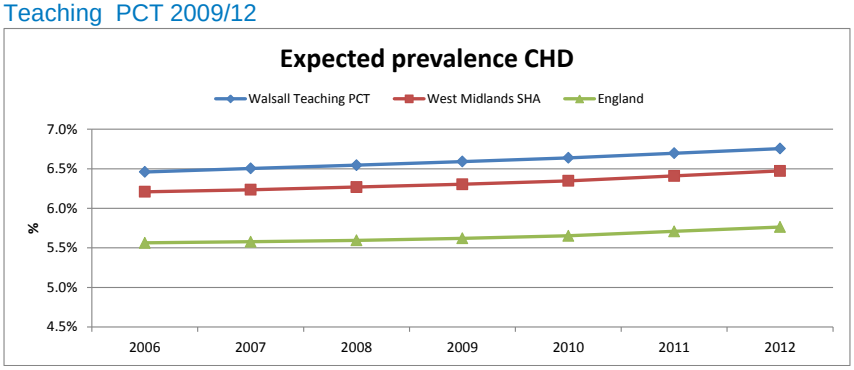
Figure C.2: Expected Prevalence of Dementia in Walsall Teaching PCT 2008/12



Source: APHO, December 2011

Levels of CHD prevalence are significantly higher for the PCT than those of England. They are also higher (but not significantly) than those of the West Midlands region. Although they have increased over the past 7 years, this is in line with the rest of the country.

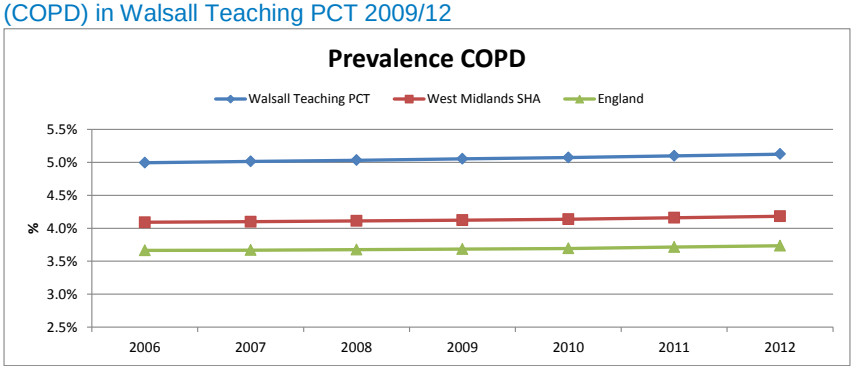
Figure C.3: Expected Prevalence of Chronic Heart Disease (CHD) in Walsall Teaching PCT 2009/12



Source: APHO, December 2011

Levels of COPD are significantly higher for the PCT than those of England and the West Midlands region. Although they have increased slightly over the past 7 years, this trend is in line with the rest of the country.

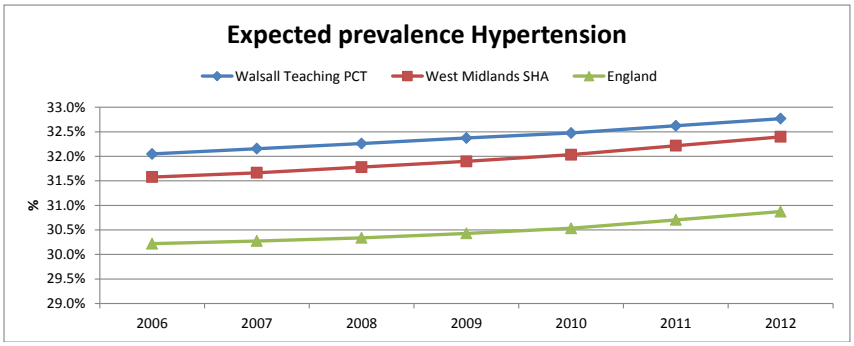
Figure C.4: Expected Prevalence of Chronic Obstructive Pulmonary Disease (COPD) in Walsall Teaching PCT 2009/12



Source: APHO, December 2011

Expected prevalence levels for Hypertension are significantly higher for the PCT than those of England. They are also higher (but not significantly) than the West Midlands region. Although they have increased over the past 7 years, this is in line with the rest of the country.

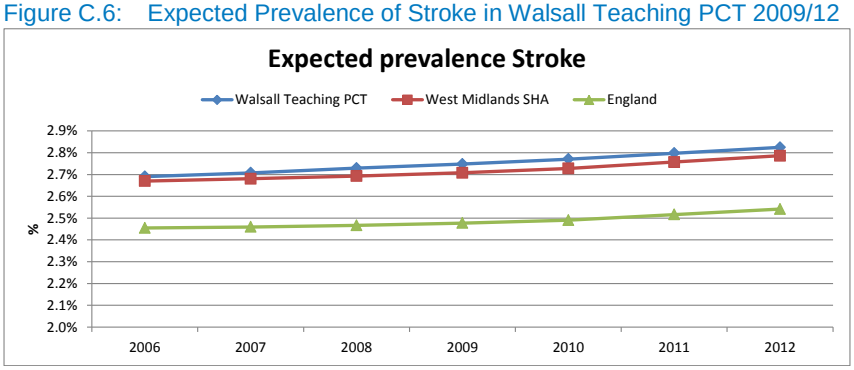
Figure C.5: Expected Prevalence of Hypertension in Walsall Teaching PCT 2009/12



Source: APHO, December 2011

Levels of Stroke prevalence are significantly higher for the PCT than those of England and similar to those of the West Midlands region, although slightly higher. Whilst they have increased over the past 7 years, this is in line with the rest of the country.

Figure C.6: Expected Prevalence of Stroke in Walsall Teaching PCT 2009/12



Source: APHO, December 2011

The expected levels of prevalence for Cardio Vascular Disease (CVD) prevalence are higher for the PCT than those of England and the West Midlands region. Whilst they have increased over the past 7 years, this is in line with the rest of the country.