Appendix 2: latest overall mortality data Worcestershire Acute Hospitals NHS Trust

SHMI Definition

What is the Summary Hospital-level Mortality Indicator?
The Summary Hospital-level Mortality Indicator (SHMI) is a high level hospital mortality indicator that is published by the Department of Health on a quarterly basis. The SHMI follows a similar principle to the general standardised mortality ratio; a measure based upon a nationally expected value. SHMI can be used as a potential smoke alarm for potential deviations away from regular practice.

How does SHMI work?

1. *Deaths up to 30 days post acute trust discharge are considered in the mortality indicator, utilising ONS data*
2. *The SHMI is the ratio of the Observed number of deaths in a Trust vs. Expected number of deaths over a period of time*
3. *The Indicator will utilise 5 factors to adjust mortality rates by*
    a. *The primary admitting diagnosis;*
    b. *The type of admission;*
    c. *A calculation of co-morbid complexity (Charlson Index of co-morbidities);*
    d. *Age; and*
    e. *Sex.*
    4. *All inpatient mortalities that occur within a Hospital are considered in the indicator*

How should SHMI be interpreted?
Due to the complexities of hospital care and the high variation in the statistical models used all deviations from the expected range are highlighted using a Random Effects funnel plot.

HSMR Definition

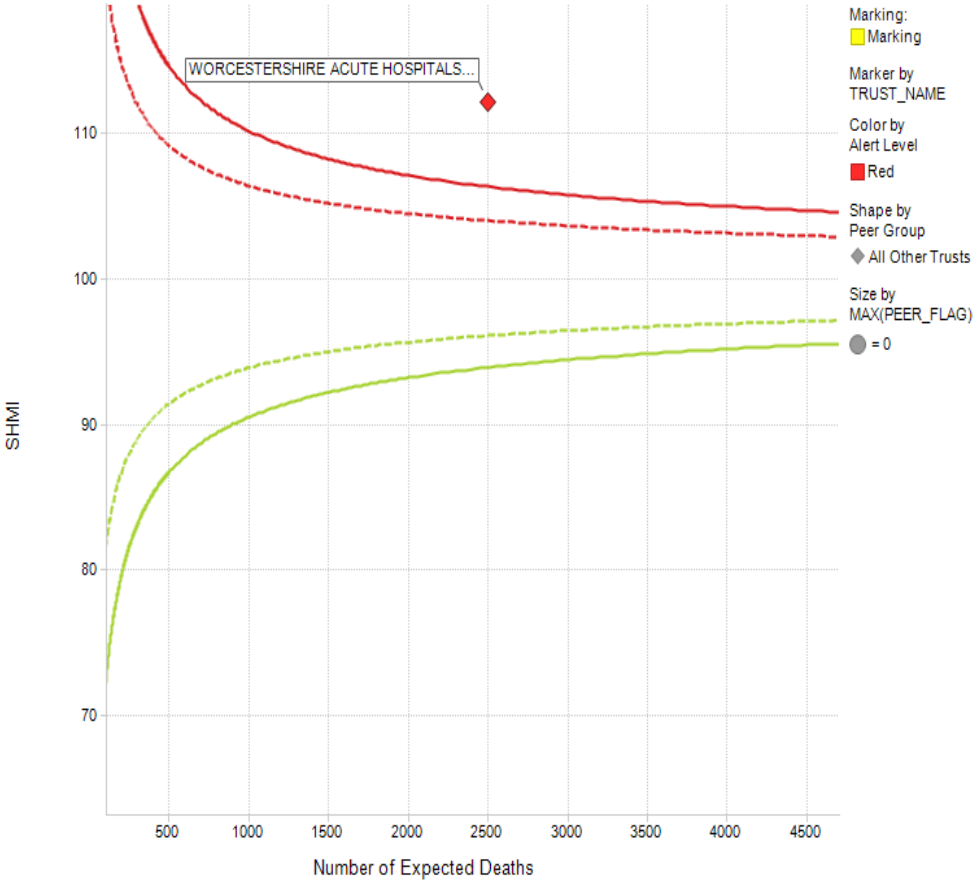
What is the Hospital Standardised Mortality Ratio?
The Hospital Standardised Mortality Ratio (HSMR) is an indicator of healthcare quality that measures whether the mortality rate at a hospital is higher or lower than you would expect. Like all statistical indicators, HSMR is not perfect. If a hospital has a high HSMR, it cannot be said for certain that this reflects failings in the care provided by the hospital. However, it can be a warning sign that things are going wrong.

How does HSMR work?
The HSMR is a ratio of the observed number of in-hospital deaths at the end of a continuous inpatient spell to the expected number of in-hospital deaths (multiplied by 100) for 56 specific CCS groups; in a specified patient group. The expected deaths are calculated from logistical regression models taking into account and adjusting for a case-mix of: age band, sex, deprivation, interaction between age band and co-morbidities, month of admission, admission method, source of admission, the presence of palliative care, number of previous emergency admissions and financial year of discharge.

How should HSMR be interpreted?
Care is needed in interpreting these results. Although a score of 100 indicates that the observed number of deaths matched the expected number in order to identify if variation from this is significant confidence intervals are calculated. A Poisson distribution model is used to calculate 95% and 99.9% confidence intervals and only when these have been crossed is performance classed as higher or lower than expected.

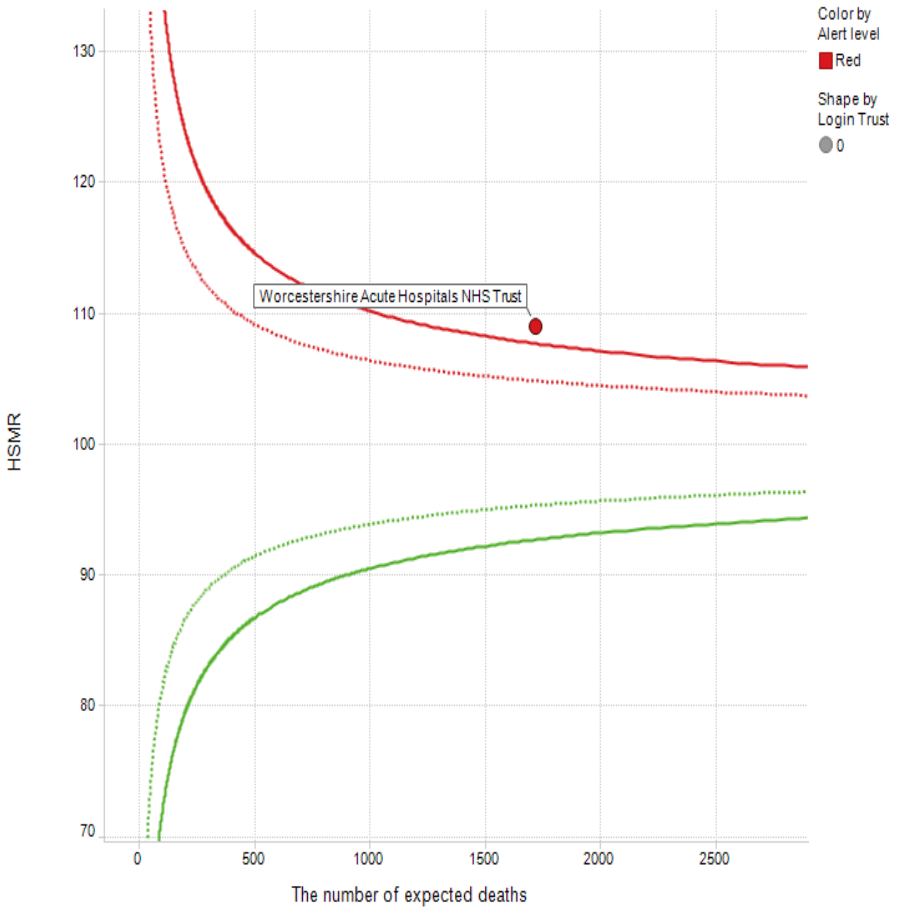
SHMI funnel chart – February 2014 to January 2015

Please note that funnel plot is only valid when SHMI score is 100 for all the organisations (shown below) as a whole. It can be verified through highlighting all data items and checking grand total in Tab 3 breakdown table.

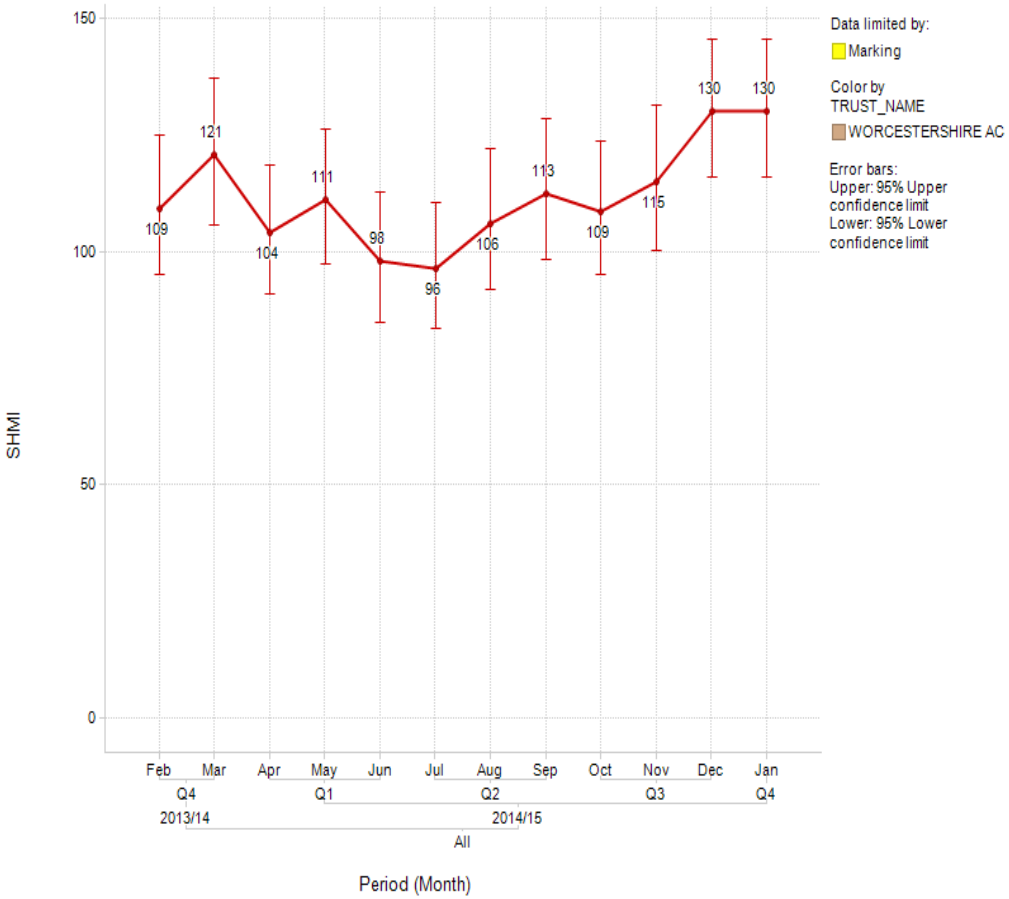


HSMR funnel plot – March 2014 to February 2015

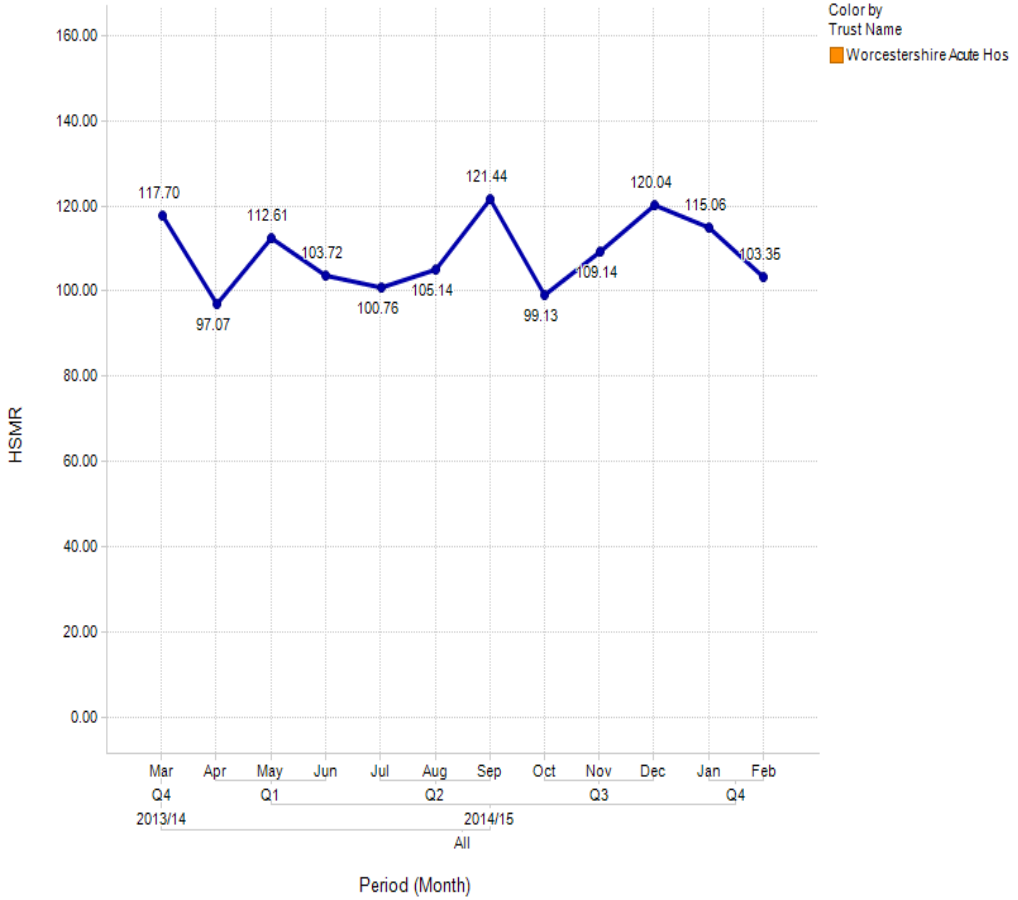
Please note that the funnel plot is only valid when the overall HSMR score is around 100.



SHMI trend – February 2014 to January 2015



HSMR trend – March 2014 to February 2015



Indicator	SHMI	HSMR
Are all hospital deaths included?	Yes all deaths are included	No, around 80% of in hospital deaths are included, which varies significantly dependent upon the services provided by each hospital
When a patient dies how many times is this counted?	1 death is counted once, and if the patient is transferred the death is attached to the last acute/secondary care provider	If a patient is transferred between hospitals within 2 days the death is counted multiple times
Does the use of palliative care code reduce the relative impact of a death on the indicator?	No	Yes
Does the indicator consider where deaths occur?	Considers in-hospital deaths but also those up to 30 days post discharge anywhere too.	Only considers in-hospital deaths
Is this applied to all health care providers?	No, does not apply to specialist hospitals	Yes