Hospital Standardised Mortality Ratio (HSMR)

What do the changes to the HSMR methodology in 2019 mean?

Introduction

Information Services Division (ISD) has produced quarterly Hospital Standardised Mortality Ratios (HSMR) for all Scottish hospitals participating in the Scottish Patient Safety Programme (SPSP) since December 2009.

The current HSMR methodology was agreed in 2015/16. The purpose of the HSMR at that time was to measure change in mortality over time, and to enable acute hospitals to monitor their progress towards the Scottish Patient Safety Programme (SPSP) aim of reducing hospital mortality by a further 10% by December 2018. HSMR information for the period up to December 2018 will be published in May 2019.

The end of this phase of the SPSP provided the opportunity to review the model methodology and subsequently update/refine it. This ensures that the methodology continues to be robust and that comparisons which are made against the national average continue to be appropriate and relevant for each point in time.

Future Reporting

Having carried out a review of the methodology, ISD intends to make the following changes to HSMR methodology and reporting from August 2019 onwards:

Change 1: 
In line with previously agreed methodology, re-base the model as planned to a new initial three year reference period of April 2016 to March 2019 (The current reference period is January 2011 to December 2013). Further to this, advance the reference period by three months for each future reporting period.

Impact:

- This will ensure that the Scottish HSMR is always representative of current outcomes and reflective of changing case-mix and provision of services.
- The focus of HSMR will be to allow hospitals to compare their outcomes to the Scottish average at a fixed point in time, in line with the English Summary Hospital-level Mortality Indicator (SHMI), rather than monitor trends in HSMR over time (Figure 1).
- The Scottish HSMR will have a baseline of 1.0, making interpretation more intuitive and comparison with individual hospitals more transparent. For example if a hospital’s HSMR is 0.85, it has 15% fewer deaths than predicted. Similarly an HSMR of 1.20 would indicate 20% more deaths than predicted.
- National trends in mortality will continue to be monitored using crude mortality.
Change 2:
Use less aggregated specialty groupings within the modelling. At present, two overarching groups are used to categorise the patient activity.

Impact:
- Moving to a more specific grouping improves the performance of the model.
- Provides more detailed groupings for further in-depth analysis.

Change 3:
Use a twelve month reporting period - rather than three months as at present - when drawing comparisons against the Scottish average.

Impact:
- This will smooth out seasonal variations and provide a larger cohort of patients for smaller hospitals thus reducing variation in the reporting of the HSMR (Figure 1).
- HSMR will be reported alongside longer term quarterly-based crude mortality trends and other contextual indicators.

Figure 1: Chart allowing hospitals to compare their outcomes to the Scottish average at a fixed point in time, with each dot representing an individual hospital.

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