

Announcement of changes to disclosure control methodology for Seven-day Services, England, Management Information

Background

The Seven-day Services indicators provide information on how we can effectively measure both improvement and variation in care provision across the week.

Indicators on the following topics are included:

- Mortality within 30 days of admission by week-part of admission to hospital
- Emergency readmissions within seven days of discharge from hospital by day of discharge
- Length of stay following an emergency admission to hospital by day of admission

All of the Seven-day Services indicators are calculated from the Hospital Episode Statistics (HES) dataset and small number suppression is applied where necessary for the purposes of disclosure control. The indicators have previously been suppressed using the methodology described in a now superseded version of the Hospital Episode Statistics (HES) Analysis Guide. Cells with counts of 1-5 inclusive were suppressed and secondary suppression was then applied where necessary to prevent the calculation of suppressed values from other values in the data.

In September 2018 the HES disclosure control methodology was updated to a method based on rounding. Full details of the updated methodology are available to download from <https://digital.nhs.uk/data-and-information/find-data-and-publications/statement-of-administrative-sources/methodological-changes#hospital-care>.

The purpose of this paper is to set out how this updated methodology will be applied to future releases of the Seven-day Services indicators. This approach has been approved by NHS Digital's Disclosure Control Panel.

Mortality indicator

The mortality indicator compares the odds of mortality within 30 days of admission for patients admitted at the weekend to the odds of mortality within 30 days of admission for patients admitted midweek.

The results are presented as odds ratios with 95 per cent confidence intervals. The over-dispersed z-score is also presented, and this represents the number of over-dispersed standard deviations the trust level odds ratio is from the marginal national value.

No counts of spells or deaths, or simple calculations (such as percentages) are included in the output. In accordance with the updated HES suppression methodology, disclosure control is not required for complex calculations such as odds ratios and z-scores. Therefore, no disclosure control will be applied to this indicator.

Emergency readmissions indicator

The emergency readmissions indicator compares the odds of an emergency readmission within seven days for patients discharged on a particular day of the week to the odds of an emergency readmission within seven days for patients discharged on a Wednesday.

The results are presented as odds ratios with 95 per cent confidence intervals. The over-dispersed z-score is also presented, and this represents the number of over-dispersed standard deviations the trust level odds ratio is from the national value.

The number of discharges, emergency readmissions and crude readmission rate are also included as contextual information. The number of emergency readmissions is broken down into those where the readmission was to the same provider that the patient was discharged from and those where the readmission was to a different provider.

The following suppression methodology will be applied:

- Counts of discharges and readmissions will be rounded to the nearest 5, except for the values 1-7 inclusive which will be displayed as '*'.¹
- In accordance with the new HES methodology, the percentage will be 0% where the numerator is zero. Otherwise, the crude readmission rate will be calculated using rounded values, which will result in some loss of accuracy. Calculated percentages will be displayed to the nearest whole number and only calculated where the rounded denominator is greater than or equal to 400¹. This is the same presentational approach that the HES team use for percentages, as it means that users can assume that the calculated percentage is within one percentage point of the 'true' percentage.
- The other values (odds ratios, confidence intervals and over-dispersed z-scores) will be calculated in the same way as they are currently. No disclosure control is required.

Length of stay indicator

The length of stay indicator presents the median length of stay along with the number of spells which were 0, 1, 2, 3 and 4+ days in length. Data is presented at trust level and at national level.

The following suppression methodology will be applied:

¹ There are no results in the output with a denominator of less than 400 for any previous edition of this publication, so this condition is unlikely to be applied in practice and a percentage will still be calculated in the majority of cases.

- No disclosure control will be applied to the national level data.
- At provider level, the counts of spells will be rounded to the nearest 5, except for the values 1-7 inclusive which will be displayed as '*'.
- At provider level the median length of stay will not be calculated if the number of values used is between 1 and 7 and a '*' will be displayed. Where the number of values used in the calculation is greater than or equal to 8 then the value will be calculated and displayed without disclosure control.
- In the interactive data visualisation that accompanies this publication, the percentage of spells with different lengths of stay is presented. Calculated percentages will be displayed to the nearest whole number where the rounded denominator is greater than or equal to 400. This is the same presentational approach that the HES team use for percentages, as it means that users can assume that the calculated percentage is within one percentage point of the 'true' percentage.

Timing

The first publication to be affected by this change will be the April 2019 release, which covers data in the period October 2017 – September 2018.

Further information

Questions and feedback on the publication are welcomed and should be sent to enquiries@nhsdigital.nhs.uk or alternatively call 0300 303 5678.