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Announcement of methodological changes to Seven-day Services, England, Experimental statistics: Mortality within 30 days of admission indicator

Background

The Seven-day Services indicators provide information on how we can effectively measure both improvement and variation in care provision across the week. They include a mortality indicator which was developed by University Hospitals Birmingham NHS Foundation Trust and is based on the methodology presented in Freemantle et al. (2015)¹.

Adjustments for various patient characteristics (including the condition the patient is in hospital for, other conditions the patient suffers from, age, sex, deprivation, ethnicity, seasonality, admission source, admission method and prior admission history) are included in the methodology. In particular, an adjustment is included for the number of prior admissions for the patient in the previous 365 days where there was a complication.

The presence of a complication is defined using the Secondary Uses Service (SUS) generated core healthcare resource group (SUSCOREHRG) field within the Hospital Episode Statistics (HES) dataset. In the HRG4 design, the HRG description included text stating whether or not complications and comorbidities were present e.g. “with CC”, “with major CC”, “with intermediate CC”, “without CC”.

From April 2017 onwards, a different version of HRG codes and descriptions has been implemented (HRG4+) which includes a change in the way that complications and comorbidities are described. Complication and comorbidity scores have been introduced to more appropriately reflect the additional resource used when treating patients with multiple complications or comorbidities². An example of the change is provided below.

In the HRG4 design, the following HRGs exist:

HRG	Root	Description
AA22A	AA22	Non-Transient Stroke or Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC
AA22B	AA22	Non-Transient Stroke or Cerebrovascular Accident, Nervous System Infections or Encephalopathy, without CC

¹ Freemantle N, Ray D, McNulty D, et al. Increased mortality associated with weekend hospital admission: a case for expanded seven day services? *BMJ* 2015; 351: h4596.

² Further information is available at <http://content.digital.nhs.uk/article/7684/HRG4-201718-Local-Payment-Group>.

In the HRG4+ design this becomes:

HRG	Root	Description
AA22C	AA22	Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 14+
AA22D	AA22	Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 11-13
AA22E	AA22	Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 8-10
AA22F	AA22	Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 5-7
AA22G	AA22	Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC Score 0-4

Action

Currently, the presence of a complication is identified when the HRG description contains “cc” and does not contain “without cc”. The change from HRG4 to HRG4+ means that, for data from April 2017 onwards, the existing methodology cannot be used to identify whether or not a complication is present. Instead, the HRG description with the lowest complication and comorbidity score bracket will be used to identify those HRGs where complications are not present. For example, a record with an HRG of AA22G with a description of “Cerebrovascular Accident, Nervous System Infections or Encephalopathy, with CC score 0-4” would be identified as a prior admission without complications.

Impact

Analysis carried out using data for the financial year 2016-17 containing both versions of the HRG code (HRG4 and HRG4+) shows that this change has very little impact on the results of the Seven-day Services mortality indicator. The national level results are unaffected and all of the provider level result change by less than two per cent. The change has been endorsed by the Seven-day Services Delivery Group and the Department of Health and Social Care (who own and sponsor the Seven-day Services indicators).

Timing

The first publication to be affected by this change will be the April 2018 release, which covers data in the period October 2016 – September 2017.

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.