

Version 1, published 20 October 2015

Announcement of methodological changes to—

- **Finalised Patient Reported Outcome Measures (PROMs) in England**
- **Provisional Monthly Patient Reported Outcome Measures (PROMs) in England**

Background

All HSCIC publications employ some type of disclosure control or suppression rules to protect patient confidentiality and safeguard against accidental identification. PROMs currently employ a standard method whereby small numbers between one and five are subject to primary suppression and secondary suppression is applied in cases where small numbers can be deduced by subtraction from the total.

The primary concern with this approach is a loss of information, primarily due to secondary suppression. PROMs publication data are used by the NHS for a number of different purposes including Best Practice Tariff (BPT) for primary hips and knees and Quality Accounts where providers publish information on their quality of care. Over-suppressed data leads to a significant number of email and telephone requests from providers requesting unsuppressed figures for their own organisation.

In addition, PROMs data is hierarchical and can be reported at two levels. High level or 'parent' counts of episodes and pre-operative questionnaires and lower level or 'child' level counts of modelled records and post-operative questionnaires which are subsets of the parent counts. The existing suppression technique is applied to both levels of reporting.

We are changing the methodology used to avoid over suppression in order to make the outputs more useful for our publication users.

Changes

The changes to the suppression rules are in two parts;

- i) Removing the need for secondary suppression;
- ii) Suppressing 'child' counts only where the 'parent' count is less than or equal to 5.

i) Secondary suppression.

PROMs are reported for four common procedures, hip and knee replacements, groin hernia and varicose vein treatment along with the total. Under existing rules, we suppress small numbers of one procedure (for example varicose veins), but because we can deduce that number by subtracting from the total, it is necessary to apply secondary suppression to the second smallest number. In many cases the number of the second smallest procedure (for example hip replacements) is very large and by applying secondary rules we often lose a lot of information.

The new method will suppress small numbers as normal, but instead of secondary suppression, the total is amended to the sum of the unsuppressed cells. This has a small effect on the total and any calculations based on the amended figure, however, the large number of hip replacements no longer needs to be suppressed.

Although impact varies on the publication, the number of organisations that are subject to secondary suppression in a typical year's finalised dataset is around 80 out of 350, or between 20 and 25 per cent. This is higher in provisional publications when overall counts are smaller.

ii) Suppressing 'child' counts only where the 'parent' count is small.

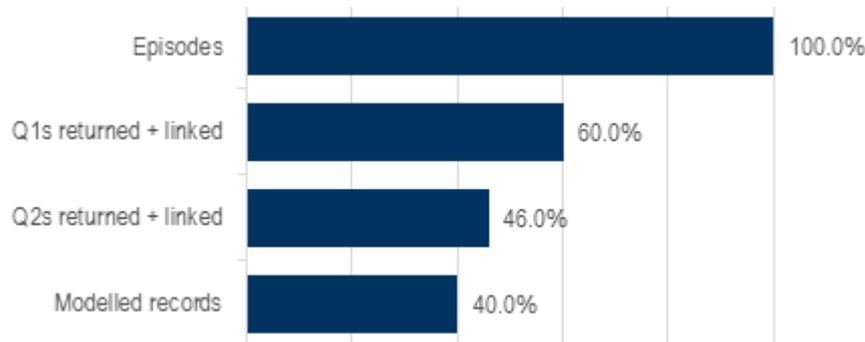
The count of post-operative questionnaires returned are currently subject to the same suppression rules as the parent number of pre-operative questionnaires of which they are a subset.

Similarly, casemix adjusted data (modelled records) are currently subject to the same suppression rules as the parent number of episodes of which they are a subset.

For example, for a record to be considered for casemix adjustment, a number of conditions must be met.

- i) The episode must link to a pre-operative PROMs questionnaire (Q1)
- ii) The episode/Q1 linked record must link to a post-operative questionnaire (Q2)
- iii) The episode/Q1/Q2 linked record must contain a complete measure (e.g. Oxford Hip Score) pre and post operatively plus all the necessary fields (e.g. IMD) required of the casemix model. Typically modelled records are around 40 per cent of all eligible episodes.

The following diagram illustrates this;



We have previously applied the same suppression rules to the 'child' counts (e.g. modelled records or post-operative questionnaires returned) as the parent count (episodes or pre-operative questionnaires). In addition, for modelled records, hip and knee replacements have been split into primary and revisions, which have been subject to the same suppression rules, irrespective of whether the total count of hip and knee episodes is greater than five.

The new method suppresses small numbers of the 'parent' counts (episodes & Q1 questionnaires) as normal, but 'child' counts (Q2s received & modelled records) will only be suppressed where parent counts are five or below as they are subsets.

Because of the inherent uncertainty of which of the parent records are included in the child counts, the new method does not introduce any further risk of deducing the identity or any further characteristics of patients. For example;

- We can't tell which five patients completed and returned their post-operative questionnaire of a total of 10 who participated pre-operatively.
- We can't tell which four hip patients who completed and returned both questionnaires (and which linked to the episode and completed all elements successfully enough to become casemix adjusted) of a total of eight who had an eligible procedure.

The impact of the parent-child suppression varies by procedure type. High volume procedures like primary hip and knee replacements have typically three to four per cent additional suppression; medium volume procedures (groin hernia, varicose vein) between six to 15 per cent and low volume procedures (revision hips and knees) between 40-50 per cent.

These changes were proposed in September 2015 and agreed by the HSCIC's internal Disclosure Control Panel.



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Timing

As introducing changes to suppression rules partway through a year introduces a disclosure risk due to subtraction, changes to our publication would need to be applied to a new year's data. This is necessary to ensure that small numbers cannot be deduced by comparing one set of provisional data under the old suppression rules with the same year's data under the new suppression rules published in subsequent months.

Provisional 2014/15 data will continue to be reported under the old suppression rules, with 2015/16 data being produced under the new rules. The first major publication of 2015/16 data is due to be published on 12 November 2015.

Further information

If you have any comments or questions about these changes to the reporting in the PROMs official statistics, please contact the HSCIC on 0300 303 5678 or email enquiries@hscic.gov.uk.