Counting hospital activity: spells or episodes?

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Dr Foster's case notes

Counting hospital activity: spells or episodes?

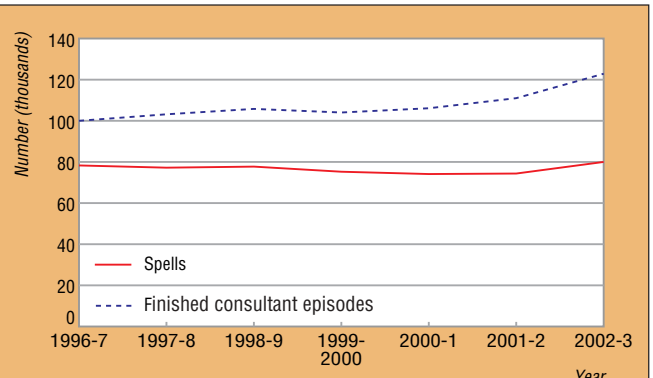
The NHS is introducing a new "payment by results" system of financial flows. Crucial to the reforms are both the tariffs for each activity and how activity is measured at the trust level. Activity will be based on hospital episode statistics (HES), a complex dataset containing over 12 million records per year on NHS patient care in England. The basic record is a finished consultant episode of care (the time spent under the care of one consultant). An admission, or spell, is defined as a continuous period of time spent as a patient within a trust, and may include more than one episode. Using HES data, we contrasted spell based activity and episode based activity, using myocardial infarction as an example.

The bottom line

- Trends in hospital activity for myocardial infarction differ depending on the unit of analysis
- Many spells contain several episodes of care with a primary diagnosis of myocardial infarction, suggesting episode inflation
- The interpretation of what constitutes a finished consultant episode does not seem to be consistent across different providers
- A move to spell based activity measures may result in considerable differences in payments to trusts

In the new "payment by results" system of financial flows in the NHS, providers are paid for the actual activity that they undertake, instead of being commissioned through block agreements. There is concern that the new system will give rise to considerable financial upheaval for some acute providers that have relied on historical budgets and may face sizeable changes to their incomes. Activity will be based on hospital episode statistics (HES). Previously, activity has been episode based, but from 2005-6, the new system will base both its tariffs and activity on spells. Using HES data, we contrasted spell based activity and episode based activity, using myocardial infarction as an example.

Number of spells and finished consultant episodes by year for myocardial infarction, hospital episode statistics 1996/7-2002/3



Each episode of care contains information on date of birth, sex, postcode, diagnosis, and procedure. To determine the course of a patient's treatment during a spell, we linked episodes by using identifiers such as NHS number, date of birth, sex, postcode, and date of admission. We looked at inpatient spells for myocardial infarction (ICD-10 I21 and I22) between 1996-7 and 2002-3 to examine the impact of using different criteria for determining numbers of myocardial infarctions over time (figure).

There are considerably more episodes with a primary diagnosis of myocardial infarction than there are spells. In both spells and episodes, the increase in 2002-3 may reflect recent changes in diagnostic criteria for myocardial infarction.[w1] The interpretation of a finished consultant episode does not seem to be consistent across different providers. Some patients with an initial diagnosis of myocardial infarction may go on to have a subsequent infarction within a spell, although there is no reason why that should be included as an extra episode. This may result from a stay in an emergency ward or perhaps a transfer to a coronary care unit in addition to an episode of care on a general medical ward. Measuring hospital activity by episode could result in overestimates of up to 50% for myocardial infarction. In 2.9% of spells, vague symptoms and signs were noted in the primary diagnosis of the first episode with myocardial infarction in the subsequent episode. Overestimates carry obvious implications for estimating the incidence of disease and assessing healthcare outcomes.

The new "payment by results" system will switch to a spell based tariff for all NHS trusts in 2005-6, and will be based on healthcare resource group, derived from a hierarchy of diagnoses and procedures.[w2] This should provide a more accurate method of calculating payments than using finished consultant episodes and will get around the problem of episode inflation. However, as has already been noted by other commentators, the new payments system will give rise to considerable upheaval for some acute providers who risk sizeable changes to their financial incomes.[w3] The move from episodes to spells, although potentially fairer, could exacerbate these problems.

Basic figures

- For all seven years, there were 538 560 inpatient spells that had a primary diagnosis of myocardial infarction in the first episode of care, compared with 754 589 episodes with the same primary diagnosis
- The difference between spells and episodes increased each year, from 27% in 1996-7 to 53% in 2002-3
- In 2002-3, 36% of spells with a primary diagnosis of myocardial infarction in the first episode seemed to have a duplicate diagnosis in subsequent episodes. This varied by trust from 0% to 100%.

Dr Foster's case notes were compiled by Paul Aylin, Susan Williams, Alex Bottle, and Brian Jarman at the Dr Foster Unit at Imperial College. Dr Foster is an independent research and publishing organisation created to examine measures of clinical performance.

References and full methodological details are on **bmj.com** and **drfoster.com**