

Limitations of the HRG Tariff

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Introduction

Case mix adjustment systems around the world may have a fatal design flaw. They all omit the speciality of care as a factor influencing length of stay and cost.

Figure 1: Reference cost data for HRG AA03Z (Inter-cranial procedures for trauma with minor diagnosis)

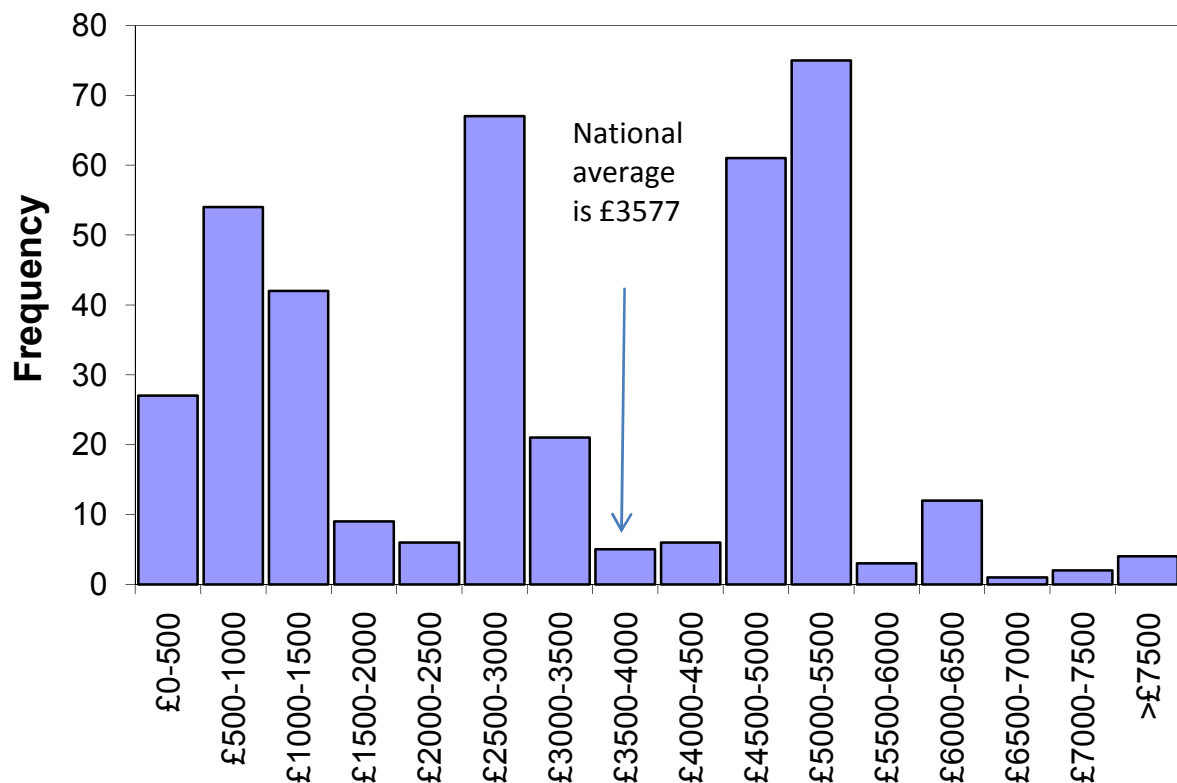


Figure 1 illustrates a common theme for the majority of HRG, namely, the three peaks in cost represent the three main specialties performing the procedures which make up this HRG. The cost is iso-resource within specialty but not within the HRG as a whole.

Recent research using the UK's HRG system of case mix adjustment has shown that the following elements of cost are all highly specialty dependant.

1. Cost per day

Using the latest version 4 of the HRG (equivalent to a DRG in other countries) the cost of a day stay in hospital (excluding the costs relating to the initial procedure or diagnosis) has been shown to be largely a function of the specialty of care and not the HRG *per se*. A paediatric admission in each specialty usually costs more than the adult equivalent (to facilitate identifying this difference the NHS has instituted a revision of specialty codes such that all specialties have a paediatric alternative). While this may be somewhat obvious to all clinicians, the UK has had to implement a complex system of specialist uplifts to compensate for what is a simple specialty dependant factor, i.e. the HRG price is an all specialty average and hence particular specialties such as Orthopaedics can be unfairly disadvantaged.

The UK uses a separate tariff for lengths of stay beyond what is deemed to be the upper length of stay trim point. In other healthcare systems such as the US there is no payment for a length of stay beyond the upper trim point. However, in the UK the omission of a specialty component has been shown to have huge implications to the cost of an excess bed day and results in large financial imbalances for hospitals which have a non-standard case mix, i.e. single specialty, teaching or specialist hospitals.

2. Specialty costs & length of stay for the same HRG

All HRG have been shown to have a unique total cost (initial procedure/diagnosis costs plus length of stay costs) which is applicable to each specialty. Likewise length of stay for the same HRG is also specialty dependant. Specialties such as dermatology and elderly care tend to have a longer length of stay (LOS) than the supposed average (all specialty average) LOS which is commonly used as a so-called efficiency benchmark.

3. Hospital Cost & LOS Efficiency

In the UK a reference cost index (RCI) is calculated for each hospital. This is effectively the average cost of running the hospital divided by the expected cost (using the all specialty HRG average prices). Analysis of a time series of the RCI for each hospital shows that the RCI is not measuring cost efficiency *per se* but is rather a measure of hospital size and complexity, i.e. hospitals cost more or less to run depending on their size and complexity. While this may be a statement of the obvious the HRGs (i.e. case mix in general) are not making the correct adjustments for these factors.

Revised Efficiency Measures

Recalculation of the (official) RCI for each hospital using specialty-HRG cost combinations has been shown to give a more stable measure of efficiency, i.e. it moderates the large over- and under-estimates of efficiency to which the all-specialty average approach is prone.

In the UK an additional measure of cost called the market forces factor (MFF) is applied. The MFF uses cost of living type factors to calculate a relative cost adjustment. However analysis of the MFF shows that it fails to explain the huge variation in the cost of a day stay seen between different hospital types. Hence in addition to a specialty component of cost

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(identified above) and the MFF adjustment there are additional specific factors relating to hospital size, local population age structure and deprivation, hospital location (i.e. island-based hospitals) and to depreciation charges (or its equivalent for PFI funded hospitals) which need to be applied to reach a true measure of cost efficiency.

Wider Implications

The wider implications to invest/disinvest decisions at acute hospitals should be obvious. Less obvious are the effects on PCT/PBC decisions to move care into the community based on HRG average price. PCTs and PBCs should carefully review the basis for such decisions in the light of the above findings.

If you are a hospital or PCT and would like a re-appraisal of your real efficiency or an estimate of the cost pressures arising from the tariff please contact HCAF at 'hcaf_rod@yahoo.co.uk'

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