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Is the HRG tariff fit for purpose?

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No product is ever better than its design brief and in this respect Healthcare Resource Groups (HRG) – which form the basic currency for payment of NHS services - rely on the fundamental (and unproven) assumption that health care costs are exclusively driven by case mix as described by diagnosis or procedure. Common sense tells that this is a gross simplification of a complex situation. In addition, a recent Audit Commission (2011) report highlights expected outcomes consistent with the rather lax way in which the Department of Health (DH) has run the reference costs collection process (i.e. comprehensive guidance but little quality validation and performance feedback), such that, one-in-eight Trusts had reference costs which did not add up to the figure given in the annual accounts and one-in-four had materially inaccurate costs for one or more HRG. One study suggests that around 37% of reference costs contain gross errors in the allocation of overhead and other costs (Jones 2011e)

A review of the costs of seven common surgical procedures found that the national HRG tariff was lower than cost for six of the seven procedures even if the procedure was conducted with high efficiency (most notably for varicose veins) and was far higher than cost for one procedure (cataracts) even if the procedure was performed inefficiently (Abbott et al 2011). Such results support the notion that the national average may not be a reliable basis for calculating HRG tariff costs (Jones 2011d,e)

In this respect a rather extensive series of articles published in BJHCM has suggested that the difference between how the tariff ‘should’ and ‘does’ work may be greater than one may have hoped. This is not a criticism of the HRG groups *per se* but rather of the reality of how the tariff actually gets used in the real world, i.e. the reality rather than the theory of counting and coding (Jones 2008a-e, 2009a-c, 2010a-d, 2011a-d). Indeed I would go so far as to suggest that while the current V4 of the HRG’s is indeed a ‘world class’ example of a clinically relevant “classification scheme” for diagnoses and procedures, it is not a world class example of a costing framework.

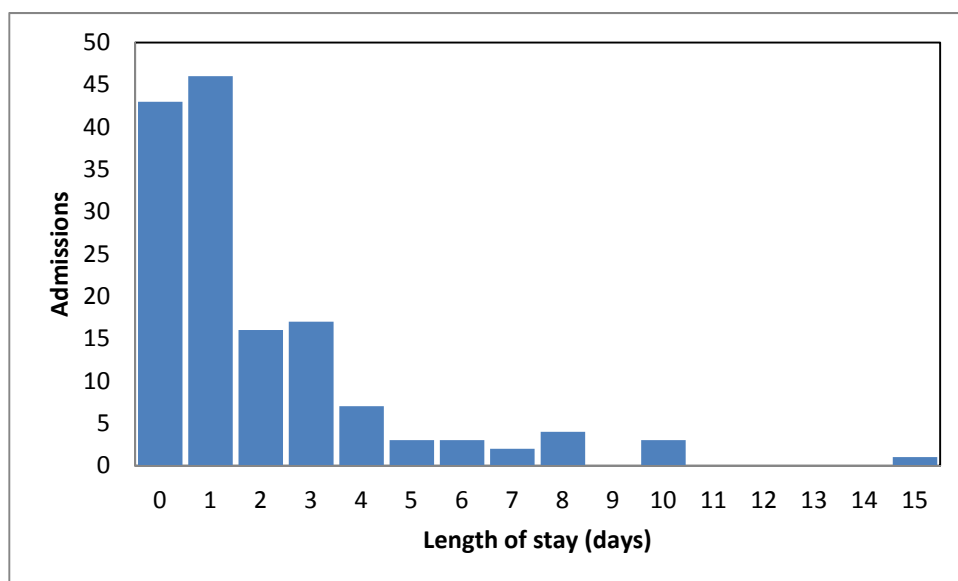
Fig. 1 demonstrates one of the key flaws in the tariff in that diagnosis does not predict length of stay (and hence costs). Each diagnosis is associated with a length of stay distribution and this is not the same as saying that diagnosis is predictive of length of stay. This explains why splits in each HRG based on length of stay have higher validity than those based on age. To illustrate this issue, the example in Fig. 1 shows a diagnosis with very little dispersion in the

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length of stay distribution which has been deliberately selected by choosing only females aged 65 to 75 to demonstrate the best case possible – all other diagnoses (covering both sexes and a wider age range) are worse than this and HRG are a compilation of multiple diagnoses or procedures. The series of articles in BJHCM has identified the following serious deficiencies:

- The tariff is open to the abuse of data standards, i.e. the fundamental difference between ambulatory and inpatient care
- The tariff is open to creaming, i.e. conducting a single procedure (often miscoded) within a multi-procedure HRG
- The different assumptions around how costs behave between the Capitation Formula and the Tariff lead to financial asymmetry, i.e. in older than average populations the provider carries a higher burden of age-related bed day costs while in younger than average populations the purchaser carries higher costs
- There are genuine economy of scale factors leading to lower average costs in medium sized organizations
- The costs of an excess bed day are almost exclusively specialty rather than HRG dependant
- The within trim point part of the tariff is perversely weighted against specialist providers and the smaller specialist services such as allergy, dermatology, etc
- The calculated Reference Cost Index (RCI) for each organization can be re-calculated using specialty-HRG combinations and this calculation removes the high spread in apparent efficiency derived from the standard tariff
- Certain HRGs are susceptible to the long-term cyclic nature in admissions for some diagnoses and hence the resulting relationship between marginal costs and volume
- The tariff calculations are open to errors of judgment such as a £400M error of judgment in the structure of the emergency short stay tariff (Jones 2010c,d, 2011d)

Figure 1: Length of stay distribution for unstable angina in women aged 65 to 75

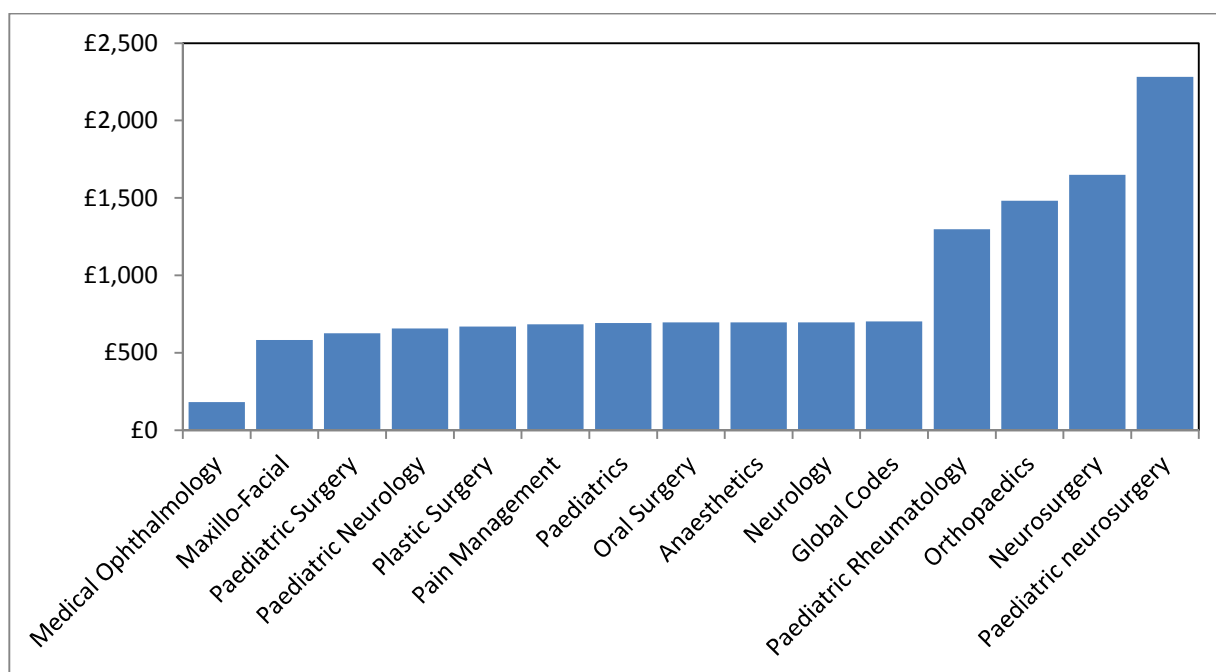


Footnote: Data is for emergency admission to a hospital which has a particularly high proportion of zero day stays - which at other hospitals may be processed as A&E attendances. Average LOS at this hospital is 1.9 days compared to a national average of 4.2 days.

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It would appear that the ‘Achilles heel’ of the tariff lies in the fact that costs within each HRG is highly specialty dependant. Fig. 2 gives one of hundreds of possible examples. This overwhelming specialty dependence of cost (and average length of stay) acts to penalize any hospital with a case mix that is different to anything other than a bulk standard district general hospital (DGH). From Fig. 2 we see that under the current tariff (an all specialty average) in HRG AA20Z the specialties paediatric rheumatology, orthopaedics, adult neurosurgery and paediatric neurosurgery will all be deemed to be ‘grossly inefficient’ due to what is nothing other than a pure artifact of the tariff and its hidden assumptions about how costs behave. Hence recent concerns over the tariff uplift for specialist paediatric services.

Figure 2: Variation in cost for a day case admission in HRG AA20Z



Footnote: 2008/09 reference costs have been recalculated at specialty level. Cost for a day case has been deliberately chosen because there should be no complications due to argument over length of stay related effects.

If we are brutally honest there are now so many HRG’s it is impossible for hospitals to accurately attribute overheads and direct costs to each HRG and this leads to a huge dispersion in local costs making the calculated national average cost for each HRG subject to a considerable error margin, i.e. what is called the standard error of the mean (Jones 2011d). Ambiguity and uncertainty in the national average cost are not conducive to good planning.

Indeed Kulinskaya et al (2005) have demonstrated that decrease in hospital, transfer from another hospital, discharge destination and provider type are all powerful determinants of length of stay (hence cost) and do not feature in the structure of the tariff. It is the author’s opinion that the tariff has gone down a policy route suited to the needs of the DH and not the NHS and may have put us in the position where we have a national tariff which is not fit for purpose.

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How could we improve the current situation? Firstly the NHS Data Definitions are in urgent need of revision/modernization as there is far too much leeway in the interpretation of basic events such as 'day case' and 'emergency admission' (Jones 2007). Scrutiny of counting and coding similar to the Recovery Audit Contractor Program in the US is required and is an excellent opportunity for involving the private sector in such a niche role.

To conclude, can I suggest that before you make financial investment and disinvestment decisions based on the tariff, especially where economy of scale is changed or a single specialty, procedure, diagnosis or specialist service is involved; you need to understand the limitations of the tariff as it affects the range of procedures and diagnoses and hence HRG within the scope of your project and do a financial 'due diligence' check before proceeding. Indeed there needs to be far higher scope for locally agreed tariffs which may be both above and below the national average especially where innovative new technology is involved (Medford et al 2009).

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