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Bed days per death – a new performance measure

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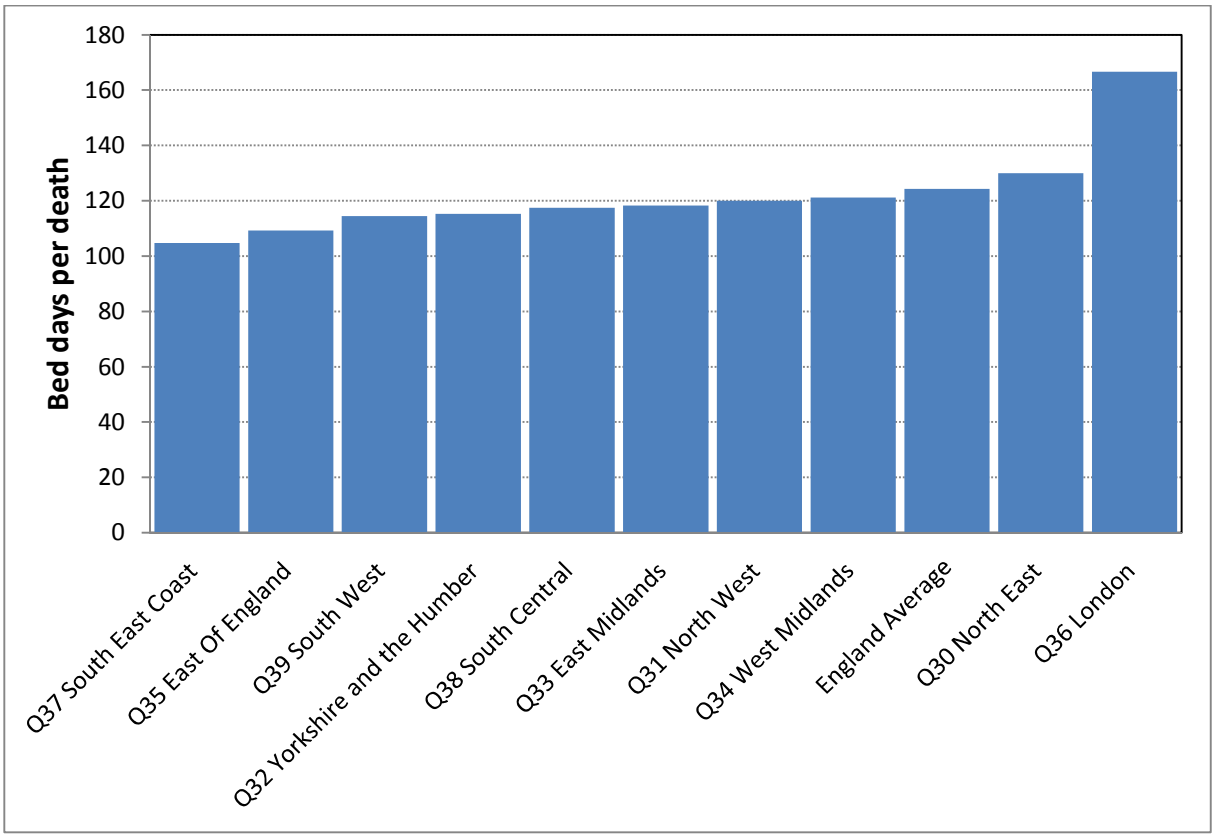
An accompanying article in this edition of BJHCM investigates the international evidence supporting the use of the trends in death and the associated ratio of occupied bed days per death as a means of forecasting future hospital overnight stay bed demand (Jones 2011).

Figure 1: Total bed days per death for residents of English health districts



Footnote: Total bed days for residents of each strategic health authority (organisation code at the prefix) in 2009/10 were obtained from; http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=209 while deaths in 2009 were obtained from "Table 4: Deaths by health area"; http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14409

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Having established that this is indeed a valid approach it is useful to apply this as a wider performance measurement tool. Indeed if we make an overall assumption that a bed day in hospital covering all admission types roughly costs less than £345 (using 2008/09 reference costs, assuming a one day stay for both day case and same day stay emergency admissions and including theatre & prosthesis costs) then the ratio of bed days per death has the potential to be a very good indicator of the likely total costs in different locations.
Figure 1 explores this potential measure of efficiency using total bed days for residents of English strategic health authorities and associated deaths. Due to the limitations of the data source all admission types (including maternity, community hospital and mental health) are included, however, maternity only accounts for 2.8% of bed days and therefore makes only a minor difference and it has been argued that the inclusion of mental health is appropriate (Jones 2011). Indeed, just as the trends over time have been shown to be remarkably constant (Jones 2011) so also is the ratio of bed days per death across all health districts other than London. Indeed the figure of around 170 bed days per death in London comes very close to that seen in Australia (Jones 2011). While drug usage is roughly similar between England and Australia it is of interest to note that the latter spends around 12% more per head on healthcare (Richards 2010).

The small differences between the non-London health districts may well be explained by different levels of private insurance, availability of hospice beds, the relative provision of nursing home places, the ability of social care to create bed equivalents and the role which deprivation plays in shifting the balance toward emergency admission with its generally longer relative length of stay (Jones 2006a-b).

The remarkable 37% difference between London (167 bed days per death) and the rest of England (122 bed days per death indicates that something is very different in the totality of health care within London. Indeed all will be aware of the strenuous efforts that the London SHA has been making over recent years to reduce costs and bed numbers and to bolster the level and quality of primary care. Indeed when it is considered that London receives only a 4% capitation needs weighting the incredible 37% higher bed days per death comes somewhat into focus (NHS London 2010).

Indeed if we were to reduce the bed days per death in London to the national average the resulting cost saving would be in the range £744M (at £345 per bed day) to £217M (at £100 per bed day). The lower of the two figures assumes that the excess of bed days are due to admission which is amenable to community-based alternatives and is largely associated hotel costs. The lower figure represents 14% of the total costs associated with the London SHA and is not too distant from the 12% higher spend per head in Australia.

In conclusion, the number of bed days per death appears to offer an alternative metric for comparing health care cost pressures in different locations. The large gap between London and other locations requires further investigation. No benchmarking tool is perfect and further development of this measure would appear to be warranted. Our attempts to understand the nature of what appear to be ‘anomalies’ is often the trigger to furthering our understanding of the underlying mechanisms regulating demand and costs.

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