

Actuarial evaluation of financial risk in healthcare purchasing

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Introduction

HCAF are the UK's leading source of actuarial analysis of financial risk in healthcare purchasing ^(1- 32). HCAF have researched this area for over 20 years and make the following observations:

1. There is a general financial risk associated with any contract. This general source of risk diminishes with contract size. HCAF have developed a method for characterising the level of this risk which is expressed as a percentage of the total contract size.
2. There is specific risk associated with emergency admissions to diagnoses covering 70% of emergency activity. This risk is related to metrological, environmental and infectious conditions.
3. There is specific risk associated with step increases in outpatient and emergency demand. Both appear to show a step increase which is triggered by a common source. The recent rise in GP referrals and emergency admissions is a recent example of this behaviour which has also occurred roughly every five to six years over the past 18 years.

HCAF can support CCGs and CSUs with an evaluation of the likely level of these risks contained within the activity and financial plans. The resulting operational flexibility implied by these risks should then be reflected in an operational risk statement for each CCG. This risk statement should identify which budgets can be cut to fund a positive variance should this occur.

To support the aims of the minimum possible elective activity consistent with the 18 week guarantee HCAF suggests that the 'Contract & Capacity Monitoring Tool' developed by HCAF be implemented across all CCG. This tool will allow each CCG to ensure that acute Trusts do not generate additional activity over and above incoming demand. Support will be given to each CCG in using the tool.

Analysis of demand will be conducted using the methods developed by HCAF over the past 15 years. Analysis at specialty level is the suggested preferred option since analysis at HRG level is clouded by Trust counting and coding issues.

HCAF have identified a specific financial risk associated with the V4 HRG, namely, that the financial risk associated with the long stay (i.e. patient stays beyond the upper trim point) part of the tariff has increased by over 30% in the transition from V3.5 to V4. This risk is specific to the counting, coding and specialty mix at specific hospitals ⁽⁶⁾.

HCAF have also discovered a specific risk associated with the short stay emergency tariff. Once again this risk is specific to particular Trusts and relates to how otherwise A&E attendances are counted as emergency assessment unit (EAU) admissions. HCAF estimate that a profit margin of over £300 per EAU admission is contained in the operation of the short stay tariff ⁽⁷⁾. The SHA may need to give guidance on how this issue is resolved specifically for those Trusts which count above average volumes of EAU activity.

In terms of the evaluation of capacity risk it is suggested that a review of bed capacity be conducted at any Trust where it is felt that there may be insufficient beds to support the level of elective, emergency & maternity bed demand. The 'Erlang for Beds' methodology developed by HCAF would be used for this purpose.

Data required supporting the analysis

1. Historic first and follow-up attendances for each CCG split by provider at specialty level. A minimum of four to five years data.
2. Historic levels of emergency, elective and day case activity for each CCG split by provider at specialty level. A minimum of four to five years data.
3. Emergency activity should be split by activity covered by the short stay tariff and that which is not.
4. Diagnostic activity as an annual time trend (as above).
5. For the review of bed capacity annual bed days by specialty to be provided by specific Trusts and/or number of births for maternity & birthing bed pools.

References

1. Jones R (2004) Financial risk in healthcare provision and contracts. Proceedings of the 2004 Crystal Ball User Conference, June 16-18th, 2004. Denver, Colorado, USA. Available from: www.hcaf.biz
2. Jones R (2008) Financial risk in practice based commissioning. *British Journal of Healthcare Management* 14(5): 199-204.
3. Jones R (2008) Financial risk in health purchasing Risk pools. *British Journal of Healthcare Management* 14(6): 240-245.
4. Jones R (2008) Financial risk at the PCT/PBC Interface. *British Journal of Healthcare Management* 14(7): 288-293.
5. Jones R (2009) The actuarial basis for financial risk in practice-based commissioning and implications to managing budgets.
6. *Primary Health Care Research & Development* 10(3): 245-253.
7. Jones R (2010) What is the financial risk in GP Commissioning? *British Journal of General Practice* 60(578): 700-701.
8. Jones R (2010) Cyclic factors behind NHS deficits and surpluses. *British Journal of Healthcare Management* 16(1): 48-50.
9. Jones R (2010) Do NHS cost pressures follow long-term patterns? *British Journal of Healthcare Management* 16(4): 192-194.

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10. Jones R (2010) Nature of health care costs and financial risk in commissioning. *British Journal of Healthcare Management* 16(9): 424-430.
11. Jones R (2010) Trends in programme budget expenditure. *British Journal of Healthcare Management* 16(11): 518-526.
12. Jones R (2011) Cycles in inpatient waiting time. *British Journal of Healthcare Management* 17(2): 80-81.
13. Jones R (2012) Time to re-evaluate financial risk in GP commissioning. *British Journal of Healthcare Management* 18(1): 39-48.
14. Jones R (2012) Gender ratio and cycles in population health costs. *British Journal of Healthcare Management* 18(3): 164-165.
15. Jones R (2012) Why is the 'real world' financial risk in commissioning so high? *British Journal of Healthcare Management* 18(4): 216-217.
16. Jones R (2012) Volatile inpatient costs: implications to CCG financial stability. *British Journal of Healthcare Management* 18(5): 251-258.
17. Jones R (2012) Are there cycles in outpatient costs? *British Journal of Healthcare Management* 18(5): 276-277.
18. Jones R (2012) Financial risk in commissioning: cancer costs. *British Journal of Healthcare Management* 18(6): 315-324.
19. Jones R (2012) Gender and financial risk in commissioning. *British Journal of Healthcare Management* 18(6): 336-337.
20. Jones R (2012) End of life and financial risk in GP commissioning. *British Journal of Healthcare Management* 18(7): 374-381.
21. Jones R (2012) Age and financial risk in healthcare costs. *British Journal of Healthcare Management* 18(7): 388-389.
22. Jones, R (2008) Limitations of the HRG tariff: the trim point. *British Journal Healthcare Management*. 14(11), 510-513.
23. Jones R (2010) Forecasting year-end activity. *British Journal of Healthcare Management* 16(7): 350-351.
24. Jones R (2010) Forecasting demand. *British Journal of Healthcare Management* 16(8): 392-393.
25. Jones R (2010) Forecasting emergency department attendances. *British Journal of Healthcare Management* 16(10): 495-496.
26. Jones R (2011) Death and future healthcare expenditure. *British Journal of Healthcare Management* 17(9): 436-437.
27. Jones R (2012) Weathering the storm: Birth forecasting in turbulent times. *Midwives Magazine* 15(2) <http://www.rcm.org.uk/midwives/features/weathering-the-storm/>
28. Jones R (2012) Ambulance call-outs and disruptive technology. *British Journal of Healthcare Management* 18(2): 112-113.
29. Jones R (2012) Are there cycles in outpatient costs? *British Journal of Healthcare Management* 18(5): 276-277.
30. Jones R (2009) Trends in emergency admissions. *British Journal of Healthcare Management* 15(4): 188-196.
31. Jones R (2009) Cycles in emergency admissions. *British Journal of Healthcare Management* 15(5): 239-246.
32. Jones R (2009) Emergency admissions and financial risk. *British Journal of Healthcare Management* 15(7): 344-350.