Author's response to reviews

Title: Primary care capitation payments in the UK.

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Version: 3 Date: 29 April 2010

Author's response to reviews: see over
Thank you for the supporting comments and the time and effort invested in reviewing our report. As instructed by the editors we will focus on comments point by point.

In the section on the Carr-Hill allocation formula, a brief discussion of the relative contribution of the six constituent indices to the overall patient weight should be outlined. Similarly the range and distribution of the weightings should be briefly described to give the reader and indication of the impact of the aggregate weightings on practice income. There is an extensive literature on case mix which seeks to show the extent to which patient weightings explain actual cost variations. There should be a brief outline of the extent to which there is empirical evidence relating the Carr-Hill patient weightings to actual variations in practice costs.

Thanks, this section could have been clearer and we have added explanation and an example to methods.

We also added a brief overview of formula funding in discussion. We had not related our findings to other funding inequities and readers might have missed an important point, that the inequities in this study are not justified. Hopefully the added discussion has enriched the discussion and given it a broader interest.

We had not previously examined the range and relative importance of the indicators. This is an interesting point. From a practice perspective, each indicator has a different importance, depending how much the practice deviates from the average for a particular variable. For instance the practice of HB lost 5% MPIG funding as it grew considerably in 2002/03, which had an effect through the list turnover index in 2004 but not in subsequent years.

To give an idea about the relative importance and effect of the indices we added the interquartile range and the percentage explained to Table 1. It is possible to report the percentage explained through a forward entry regression model, this is more conventional and gives similar results, although there are some shortcomings in that methodology especially as there is probably some degree of multicollinearity in the models. The advantage of the forward entry model is that the percentage explained by each index, when added together, would not exceed the percentage explained of the model with all indices, or indeed exceed 100%, which could be confusing for the audience. The editors might indicate which method is preferred.
The paper does not discuss the rationale for shifting from the original to the modified ASI. What is the argument that has been advanced for doing so? Does it stand scrutiny?

The paper could describe the policy choices to deal with the problem of inequity more clearly. For example, the policy choices could be described as (1) to maintain aggregate expenditure and leave current inequities in place, (2) maintain aggregate expenditure and redistribute funds equitably, or (3) increase aggregate expenditure and distribute funds equitably. Arguably maintaining the status quo through the use of a 'correction factor' is least controversial.

Reallocating existing funds to ensure equity is most efficient but also most controversial. Finally, increasing the overall quantum for general practice with no benefits to patients is inefficient. Which of these alternatives (or some other) do the authors support?

Thanks, we added to discussion. We report how we uncovered a historic funding inequity at national level and how changes effected at union level will exacerbate inequity. We had not considered how to rectify this, it seems this would be a political decision at union level as it involves movement of a substantial sum across the nations. It is unlikely that government would favour increasing the healthcare budget without a return, and the relative small amount of funding English practices would lose (0.6%) should not pose a major obstacle to correct a historic inequity with far greater losses for Welsh practices (11.2%), which leaves the second option as the most likely one we would implement if we were in a position to do so.

We too were puzzled why or how the modifications were introduced in the formula. We assumed the funding inequity might not be known to the various interested parties, lending some value to this report. However, one could argue that the construction of the system with the “PCO weighted list size normalising index” and the existence of the unpublished “functional specifications” document [12] containing a simplified excel spreadsheet, seems to suggest the Department of Health might be aware of the anomaly. Similarly, we approached the architects of the formula, unfortunately they could not respond, leaving it open whether this group was aware. Finally, the BMA Welsh office was aware that normalising occurred at national level, something that is pivotal in unlocking the modifications of the formula. If these organisations were not aware, one could argue that our enquiries would have made them aware and it seems the funding anomaly has sufficient importance to be made public so that it can be corrected, or that the rationale for the funding inequities (if there is one) can be explained. Information like this might help other unions or countries with devolved regions help to set health budgets rationally. However without any evidence either way this is speculation on our part.
**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
'I declare that I have no competing interests
Authors’ response to Reviewer's report (indented text)

Thank you for the supporting comments and the time and effort invested in reviewing our report. As instructed by the editors we will focus on comments point by point.

- **Major Compulsory Revisions**

1. This is a well-written paper which appears to have accurate information and a reasonable analysis. The difficulty I have with the paper is that I am a US reviewer and it is difficult to imagine that there would be much of a readership for this paper among US health policy people. It is very detailed about particular issues affecting the UK. Thus I would defer to UK reviewers regarding the level of interest this paper would create in the UK.

   Thanks, we extended the discussion with more generalised consideration of primary care funding and equity principles, hopefully adding a little to the debate on this complex matter.

2. This paper focuses on differences between England and Wales. It would seem likely that similar differences in payment equity among practices might exist within England, and the paper does not comment on these. I am not suggesting that the paper add information on this likelihood because that would be a different research study, but it would be worth commenting on the likelihood that the inequities may be more pervasive than simply between English and Welsh practices.

   Thanks, little research has been performed into funding differences for various practices within England. The earliest work was by Leese and Bosanquet (High and low incomes in General Practice. BMJ. 1989; 298: 932-934) but this is probably not relevant as they examined physician income, but not capitation payments. Some relevant work was done by Ashworth et al. (Health Services Management Research 2005; 18: 258-264) and Morgan et al (BJGP 2006; 56: 825-829). Ashworth et al examined how different activities and income streams contributed to overall practice profit and it was noted that staff budget was the largest determinant apart from having more patients per physician. Morgan et al compared the funding and quality scores for practices on various contracts (GMS, PMS and EMS), defining funding as that for core services and attempting to make the various contracts comparable. This study threw up seemingly inexplicable funding inequities between the various contracts within England and a seemingly inexplicable range of funding within the various contracts.

   Concentrating on just the GMS contract, which is the most homogenous as the terms and conditions are negotiated and defined.
nationally, there are inequities in the various amounts of MPIG income support GMS practices receive within a country or even within a regional health authority. We are currently examining systematic reasons for the seemingly inequitable distribution of the MPIG monies, however that study does not seem to be leading to a systematic inequity of the scale of the national inequity observed in the current study.

We added to the discussion to note the important general background of funding inequities, but the scope of this falls outside the focus of the current report and we were hoping to finalize the study on this in the next few months.

3. The explanation of how primary care practices are reimbursed is well done and interesting to non-UK readers.

- Minor Essential Revisions
4. The paper is well written and if the major issues listed above are addressed, I have no minor revisions to suggest.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.