Author’s response to reviews

Title: Outcomes of Aortic Aneurysm Surgery in England: A nationwide cohort study using Hospital Admissions Data from 2002 to 2015

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Dear Editor and reviewer,

Thank you for the opportunity to submit this revised version. Thank you for your further comments and we are sorry if you felt that the paper did not make clear the value of the consensus group in developing the algorithms for identifying case mix. We would agree that HES data has limitations, due to the nature of the coded information and potential for mis-coding. The comments you provided previously relating to the identification of juxtarenal aneurysms and EVAR identification, prior the introduction of specific codes, highlight two such examples. However, despite these limitations, which we have acknowledged in the paper, HES represents one of the most comprehensive and extensive collections of routinely collected data, allows longitudinal data linkage and linkage to mortality information. As such, it has been, and is likely to continue to be used to consider trends in activity and outcome and to link to other data sets, such as richer clinical registries, for comparisons and cross-checking. Given this, and for the purposes of our further analysis and modelling, it is important to develop consistent and reproducible methods of categorising activity and outcome, based upon the information available in HES records.

The role of the consensus group was to consider specific instances in which HES records contained contradictory or ambiguous information in order to determine how best to classify such cases. In order to do this, they were able to consider all fields within the HES record,
which included such information as secondary diagnoses and procedures, speciality, admission source, linked admissions and timing of procedures. We believe that such classification would not have been possible without an understanding of the clinical conditions and context available to the consensus group.

We have updated the manuscript to include some additional information about the role of the consensus group.

We are using this data to understand the trends and outcomes of AAA in the United Kingdom. This is the only type of data that can be used for this purpose. We are investigating the best methods to reconfigure vascular services in the United Kingdom.

We agree that there are many issues with HES data; especially as it is a retrospective, observational data. Hence our paper's emphasis on describing the methods we used to overcome these problems including differentiating between elective, urgent and ruptured AAA repair as well as many other issues that we dealt with in this study.

We would be ever so grateful if you can kindly consider this paper for publication in your journal.

Many Thanks

Ahmed Aber