Reviewer's report

Title: Cancer diagnosed by emergency admission in England: an observational study using the General Practice Research Database

Version: 3 Date: 23 May 2013

Reviewer: Ileana Baldi

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Most of the comments have not been resolved in a satisfactory way. The work in its present form gives a partial and rough picture of cancers diagnosed by emergency admission in England. Assuming that analyses by each cancer type are not feasible, also given the small numbers, I think that more efforts could be made to produce separate analyses at least for the most common cancers (breast, colon, lung).

Major compulsory revisions

1. I acknowledge my lack of familiarity with practical issues concerning Read Codes but I still do not get the point. Read Codes are more detailed than ICDs, therefore only the mapping from Read Codes to ICDs is possible and straightforward.

Let's focus on the most common diagnosis: breast cancer. To analyse %breast cancer diagnosed in emergency route (ICD-10 codes) out of all first-ever breast cancer diagnoses (ICD-10 OR Read Codes) we need to establish the denominator. Frankly, I would adopt a broad definition of breast cancer from Read codes (maybe the one used in BMJ. 2012 Jul 13;345:e4447) and from ICD-10 codes to accomplish this task. If we do not rely on validated definitions the result can be imprecise but, at least for the analysis of risk factors, by far better than pooling all cancers.

2. Even though forward, backward, or stepwise selection are common methods of dealing with variable selection there are several reasons not to use them. The essential problems with stepwise methods have been admirably summarized by Frank Harrell in the book “Regression Modeling Strategies” (Springer, 2001). Just to mention a few, the standard errors of the parameter estimates are too small, parameter estimates are biased high in absolute value and collinearity problems are exacerbated. All issue raised in my previous revision (original comment #3) on the questionable model building strategy still hold.

Level of interest: An article of limited interest

Quality of written English: Acceptable
**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests