Reviewer’s report

Title: Vascular disease in women: Comparison of diagnoses in hospital episode statistics and general practice records in England

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Reviewer: Markku Mahonen

Reviewer’s report:

I think this study is important, showing that HES records can be used for epidemiological research, maybe electronically linked with other data. However, this study needs a major rethinking and rewriting.

After reading this study several times, I am not quite sure what the aim of this study was. Is this study done to assess the validity of HES using GPs records as golden standard? ‘Relatively little is known about the reliability of using HES records to ascertain clinical diagnoses.’ Meaning that GPs records are the golden standard? Or the other way, as the tables are written, using HES diagnoses as the standard?

Or is this study done to assess agreement between GPs records and HES diagnoses? Or is it so that HES data are unreliable, and GP’s data are more valid? But GPs data are based on HES records?

Or is this study about case ascertainment using HES?

It is unclear if this is a electronic record linkage study? I cannot find any mention on that. Or are the data obtained from GPs records? ‘…the HES admission date and diagnosis code were compared with the information provided by the general practitioner…’

Was this done using (separate) electronic linkage? Or data obtained from GPs records? In the latter case, obviously the agreement must be high.

How come that SAH agreement was 96% - if GP diagnosis was done before hospital admission? SAH is a diagnosis done in hospital, not by GP. Did GP have hospital records available when she/he answered the query? This must be so. In that case, what is the difference between HES and hospital records?

My interpretation: this study was

1) about the reliability of data recorded in HES, comparing HES admission dates and ICD codes with hospital records (which were obtained from GPs). If this is correct, the study shows that HES data are correctly coded and numerically correct and can be used.

2) This study may also be about can HES records be used for case ascertainment, using GPs records as the reference. However, the problem is, obviously, with GP records - it is not possible that almost all CHD patients are
hospitalized. Or are outpatient clinic visits also coded and included in HES?

Maybe GPs answering the study form did not review their data thoroughly. I do not think the results of this study shows anything about the completeness of case ascertainmetn using HES - unfortunately.

No statistical analyses are provided.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.