Reviewer's report

Title: The disease burden of pertussis in adults 50 years old and older in the United States: a retrospective study

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Reviewer: Wiebke Hellenbrand

Reviewer's report:

The authors have in general satisfactorily revised the manuscript. A few questions remained or came up upon re-reading the manuscript: These can be considered discretionary revisions.

1. What proportion of 1691 patients not observed in the database at least 3 months before and after the index date had a positive laboratory test? And was the distribution of demographic variables (age, sex) similar to included cases? Again, including these patients would not be appropriate for estimating resource utilization, however, they should probably be included for incidence estimates. A similar argument applies to the 2651 patients with a positive laboratory test. While the authors now discuss that their results are an underestimate, an actual sensitivity analysis taking into account the above questions would be more satisfying. Excluding such an immense number of probably true cases could have an influence on age- and sex-distribution as well as the temporal pattern.

2. On p. 10 under “Incidence of Pertussis” the authors now present ratios of their incidence estimates to the NNDSS estimates. It would be more informative to present NNDSS rates on Fig. 1, to see if variations from year to year are also similar. It would also probably be possible to obtain pertussis case numbers for the age group 50-64 upon request from NNDSS.

3. The authors might want to discuss why younger patients incur more costs than older patients, as this seems counter-intuitive. Perhaps there were more patients with underlying illness in this age group as suggested by a higher proportion with asthma and much higher charges for other medications? Perhaps physicians more likely to run diagnostic tests in younger persons? Etc. etc.

4. In the conclusions, the authors might emphasize more strongly that substantial costs are incurred through this disease – it might also be useful to estimate total costs for an average incidence (min max estimates) to illustrate this point.

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.