Reviewer's report

Title: Vaccination coverage in children can be estimated from health insurance data

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Reviewer: Mohan Digambar Gupte

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‘Vaccination coverage in children can be estimated from health insurance data’

This paper gives an interesting approach to vaccination coverage estimations in Germany. I have some specific comments, given below.

· Introduction
  o Why do you need to assess vaccination coverage in Germany? Apart from the stated universal goals, are there any specific threats? e.g., diphtheria or poor vaccination coverages in the neighbouring countries?

· Methods and results:
  o KVB related: is KVB similar to other KVs? (with respect to identifying different vaccine antigens administered at vaccination visits, since July 2001).
  o Re-registration issues: Deriving denominator from the data sources seems to be questionable.
  o What are the costs of National level immunization survey in Germany?
  o Migration: What is the nature of migration – temporary or permanent? Does it include in and out migration? What is the magnitude of re-registration?
  o Two visits to KV: 111,799 children, 78% of the birth cohort; Even though the actual number falls to 78%, how one can be sure that everyone in those 78% really belonged to KVB? It will be close to reality, all the same.
  o Table 1 is not supported by any hard data.
  o Table 2: Better estimated vaccination coverage is to be expected in the reduced KVB; Survey data shows much higher coverages; Overall coverages is still very low; Any comments on that?
  o Restricting children to two visits, will reduce over-estimation of denominator, but how close to the real-life situation?
  o If the survey is based on 88 individuals, wide 95% confidence intervals are to be expected. Survey data, hence, may not be useful to ascertain validity issues.

· Discussion:
  o First paragraph is questionable. Using the billing data, for vaccination coverage estimate is tempting but is not proved to be valid. Data for nearly 80% of children available and hence useful information could be generated.
Comparison of the reduced KVB data set to survey based data on 88 children is not useful, in view of wide confidence intervals.

AOK data set related details not available (Page 9; last paragraph; Table 3 is not mentioned in the text); Approach for AOK data set and two visits data set is essentially similar. Why not use AOK data set, which is more readily available and more dependable? Instead of using reduced KVB data set, use AOK data and link it with KVB data.

Page 10 top paragraph: No supporting data for discussion points mentioned.

Implications of the findings in terms of (1) the method used for coverage estimation and (2) low vaccination coverage needs to be commented upon and discussed.