Reviewer's report

Title: Varicella routine vaccination and the effects on varicella epidemiology - results from the Bavarian Varicella Surveillance Project (BaVariPro), 2006-2011

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Reviewer: Paolo Bonanni

Reviewer's report:

The manuscript deals with a very up-to-date subject, is well written and presents results on the coverage and the impact achieved after implementation of universal routine varicella vaccination that are of great interest not only for Germany, but for all countries involved or planning the introduction of this kind of public health programme.

Only minor corrections and clarifications are needed before the article can be judged ready for publication in BMC Infectious Diseases. The only exception to this is question n. 1), which impacts on the overall calculations presented throughout the study and that represents a crucial clarification as to the acceptability of the presented results.

A list of those points follows:

1) Methods section, page 4: there is an apparent discrepancy between the average yearly population size of the first 17 age cohorts (237,700 children) and the yearly number of births (16,400). If the birth rate is supposed to have remained relatively stable during the last 17 years, and given the extremely low general mortality of children in Germany, the study population should be around 278,800 subjects. What is the reason for this lower denominator? High emigration, changing birth rate in the last 20 years, or what else? Please clarify.

2) Parent surveys (page 5): what is the reason for choosing a random sample of 600 children? Was the number calculated based on considerations about statistical power of the presumed rate of responses? Since the percentage of returned filled questionnaires was limited, did the calculation forecast low response rates?

3) Since the participating paediatric practices changed over time during the study period., it would be useful to present the data on coverage, number of vaccinations per 1000 contacts, number of varicella cases, etc. both on the overall sample of practices, and also on those practices that were constantly involved in the study, or at least state (if that is the case) that the data on those practices that participated to the whole study show consistent results with the overall sample.

4) The last part of the discussion section and the considerations written in the conclusion about the difficult sustainability of varicella coverage with a preferential recommendation to use separate MMR + V instead of the
quadrivalent MMR-V vaccine for the first dose should be expanded. The Authors should try to show the comparative effects of a higher coverage with varicella in terms of reduction of cases, complications and hospitalizations, versus the forecast of the additional number of febrile seizures in the Bavarian population (according to the data reported in the literature) in a scenario of continuing quadrivalent vaccine use, thus giving to the reader more elements to judge on the real desirability to shift to MMR+V immunization for the first dose and the potential consequences on disease resurgence and shift of age at first infection of such decision.

**Level of interest:** An article of outstanding merit and interest in its field

**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