Author's response to reviews

Title: Evaluation of adult dTPaP vaccination coverage in France: the experience of Lyon city - 2010-2011

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Author's response to reviews: see over
Responses to the reviewers

Reviewer's report  N°1

**Title:** Evaluation of adult dTPaP vaccination coverage in France: experience of Lyon area, 2010-2011

*We changed the title to “Evaluation of adult dTPaP vaccination coverage in France: experience in Lyon city, 2010-2011”*

**Version:** 3  **Date:** 2 August 2012  
**Reviewer:** Alberto E Tozzi

**Reviewer's report:**

The manuscript describes a simple survey to assess immunization coverage in a population of adults in Lyon area. The results are interesting and deserve to be discussed but it would be important to add some additional information to frame the results.

1. The main problem in understanding representativeness of the sample is the lack of information about the total population to whom the survey was proposed. How many? Were the age distribution of respondents similar to the source population?

   *We proposed the survey to all subjects who went to laboratories, and some of them agreed to participate in the study. Table 1 reports the characteristics of Lyon inhabitants (480,000) and the study population, which was older, as expected, with more healthcare system contact.*

2. What has been the epidemiology of pertussis in the area? A reader would be curious to see how much immunization coverage goes with incidence.

   *No data are available on pertussis epidemiology in the Lyon area and in France because pertussis notification is not mandatory.*

3. Are there seroepidemiological data available to reconcile immunization coverage with incidence rates?

   *No data are available in France.*

4. The manuscript does not report information for the cause of not being up to date with pertussis immunization. These data would be important to translate results into practical interventions. Do the Authors have comments about the potential causes (and on determinants of immunization as well)?

   *The point is interesting but this information was not requested because it was not the study’s objective.*

   *Patients might think that pertussis is mostly a childhood disease and are thus not aware of immunisation.*

   *The “cocooning” strategy – vaccinating people who have contact with infants – has been difficult to implement.*

5. Other determinants such as underlying diseases or receiving a recommendation by a physician would be also important to know. Were other data collected on these characteristics?
We did not collect data on underlying diseases. We only asked about subjects’ knowledge of pertussis vaccinations and who administered them.

6. The results on pregnant women deserve more discussion in light of the observed epidemiology of pertussis in infants (see comment 2)
We interviewed pregnant women who went to laboratories for tests related to their condition. They were often unaware of the necessity of being vaccinated against pertussis. (We commented further on this issue in the Discussion section).

7. Is pertussis immunization recommended in France during pregnancy?
No, it is not recommended during pregnancy. Since 2004, the cocooning strategy offers reminders about dTPaP vaccine for adults, prospective parents and the entourage of pregnant women. We analysed the results based on this strategy.

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

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:
I am principal investigator of a clinical trial on MMRV vaccine (Glaxo SmithKline) and of a trial on hexavalent vaccines (Sanofi Pasteur MSD). I am also PI of an observational study on immunoresponse to conjugate vaccines in splenectomized patients (Pfizer).
Reviewer's report   N°2

Title: Evaluation of adult dTPaP vaccination coverage in France: experience of Lyon area, 2010-2011
We changed the title to “Evaluation of adult dTPaP vaccination coverage in France: experience in Lyon city, 2010-2011”

Version: 3 Date: 31 July 2012
Reviewer: Carl Heinz Wirsing von Koenig

Reviewer's report:
The authors describe a study in which they collected information about vaccine coverage for tetanus, diphtheria, poliomyelitis and pertussis among 680 subjects. The body of collected data may justify a publication, but the manuscript needs major revision in order to clarify how the study was done and how the results were produced.

Major points:

Introduction
You say that your primary objective was to evaluate vaccination coverage by age in the general population, and your secondary objective was to compare recall of vaccination with documented vaccine coverage. In the introduction, it would be helpful to have the French vaccination calendar for adults for tetanus, diphtheria, poliomyelitis and pertussis.
Annexe 1 lists the vaccination schedule in France.

Materials and methods
The authors found their subjects among patients, who sought medical attention and for whom a laboratory test was ordered. This laboratory test had then to be done in one of six selected private laboratories in the Lyon area. The authors also cite that they did a seroepidemiological study with these laboratories before.

These laboratories are part of a network involved and interested in collaborative studies with universities. They were included on a voluntary basis, but their impact on population selection was probably very low.

A study was conducted 4 years ago on varicella antibodies among pregnant women (Ref. 5).

Primary epidemiological information: Many more information is needed about the selection of the patients: the authors say that Lyon is a city of more than one million inhabitants. The city of Lyon has around 480,000 inhabitants, whereas the greater Lyon region has around 1,4 million inhabitants. What percentage of the region is served by the selected laboratories?

These laboratories covered Lyon city, located in the Department of Rhône, and were distributed homogeneously in this area. Each laboratory covered around 14,000 inhabitants.

As requested, we changed “Lyon area” to “Lyon city”.

Selection of patients: The authors say that they selected patients aged more that 19 years without giving the overall number of patients seeking laboratory tests in the selected laboratories between October 2010 (1st ?) and February 2011 (28th ?).

October 13, 2010 and February 11, 2011.

Were all patients contacted, or, if not, how were they selected? Was the willingness to participate the only selection criterion, or were there others.
All patients were contacted in the laboratories and were asked to participate. Only volunteering patients were included.

Methods of data acquisition: How did the research assistant retrieve the information? Were the patients given the questionnaires and were they visited later to obtain the vaccination documents?

Information was collected by standardised questionnaire administered by research assistants in the laboratories based on face to face interviews. Patients were not visited at home.

In your results section, you say that 75% of patients would be able to produce a vaccination certificate or something else, but only 33.1% actually reported something like a vaccination document. How did you select that?

75% of patients said they were able to return with documentation. In fact, 33.1% of patients provided documented proof. Documentation was obtained when patients returned for their test results, or when they came back for study participation, or when they had records with them in the first instance. We deleted this information from the text (75%).

Comparison to the general population: if you would meet your primary objective, you would need to verify that the 680 subjects are representative of the general population of the Lyon area.

Compared to the 2009 Lyon city census, the study population was older and more likely female. Median age was 63 years [51-73] vs 40 [28-58] years. Female gender: 64% vs 54%. Women and the elderly were more likely to take care of their health. We reported this information in Table 1.

Statistical analysis: you confounded quantitative and qualitative. We apologize for the mistake: it has been corrected in the text.

For quantitative data (which ones?), how did you verify the distribution when you use standard deviation?

We checked normal distribution (Kolmogorov-Smirnov test) by t-test for mean comparison (age).

For what variables did you use the chi-square test and for which variables did you use Fisher’s exact test?

Fisher’s exact test was performed when sample size was less than 5 individuals in 1 cell of 2X2 tables.

Results: Demographic information is very sparse. How was the age distribution? It would be appropriate to produce a table giving the age strata you used in your study as compared to the same age strata in the overall Lyon area population. I would also like to see the mean age as well as the 5, 10, 25, 50, 75, 90 and 95 percentiles. In respect to the occupational groups and educational level, a similar table would have been helpful.

We added Table 1 to provide this information (median and interquartile range), occupational group and education level.

If you define your primary and secondary objective, you should follow it in your results section, i.e. giving age-related vaccine coverage first, and then produce the information contained in table 2.

We changed the order of results in the manuscript.
Finally you could add the other tables or the figure if necessary. 
We added Table 1 (characteristics of individuals with documentation included for evaluation of dTPaP vaccine coverage) and deleted Figure 1.

**Discussion:** can be shortened significantly if you discuss your results in relation to published data from France and other countries. 
*We shortened the text, as requested.*

Tables and figures: Suggest omitting figure 1 and giving the few data in the text. 
*We removed Figure 1 and added a new Table 1 to describe study population characteristics and changed old Table 1 in Table 2.*

Table 1: are the data in row 1 self-recall data and the data in row 2 documented data or are both self-recall in different groups? 
*Both rows provide self-recall data in different groups. Information was collected by research assistants.*

Table 2: Giving a percentage instead of a relation is somewhat confusing that you try to circumvent with the explanatory footnote. Suggest reformatting the table. 
*We changed this table, as suggested.*

Table 3: This table is made of the 225 subjects that produced a vaccination certificate. You then compare coverage of combination vaccines without giving information in the text which combination vaccines are licensed in France (i.e. Tdap, T, Td, polio, Tdap-polio, dT-polio). All of them were licensed in France as of 1999. dT-IPV and dTaP-IPV combination was administered most commonly.

**Level of interest:** An article of limited interest.

**Quality of written English:** Needs some language corrections before being published.

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**  
I declare that I do not have any competing interests.