Reviewer’s report

Title: Influenza vaccination of primary healthcare physicians is associated with vaccination coverages in their patients: a prevalence study

Version: 3 Date: 30 December 2014

Reviewer: Annunziata Faustini

Reviewer’s report:

COMMENTS TO AUTHORS
The authors aimed to verify the hypothesis that influenza vaccination of primary care physicians is associated with vaccination coverage of the elderly. They carried out a survey with questionnaires sent to a random sample of physicians working in primary care centres in 7 Spanish regions, so as to obtain data about their age, sex, vaccination status, and opinions about and attitudes towards influenza vaccinations. The vaccination coverage in their patients aged > 64 years in 2011-2012 was taken from regional primary care records. Among the physicians, 55.3% had been vaccinated, among the elderly 56.3% had. Using a multivariate regression analysis, the authors found that vaccination of the physicians, their feeling that the vaccine was effective, and the region where they worked were the most important factors associated with vaccination coverage of the elderly.

GENERAL COMMENTS
• The aim of this study is not clearly stated and the reader wonders whether the authors intended to provide indications which might remove obstacles to achieving an adequate population coverage as regards influenza vaccination or whether they aimed to assess the contribution that physician-related factors make to unsatisfactory vaccination coverage.
• A clearer definition of the aims would be of help in judging whether the methods used are appropriate to the research question and whether the conclusions are supported by the results. More information about the Spanish situation could help to clarify this point: is there a program for influenza vaccination of the elderly in Spain? or, more importantly, is there a vaccination program for healthcare workers?
• Methodological imprecision affects the inferential process the authors developed to answer the research question.

MAJOR COMMENTS

Title
The authors describe their work as a prevalence study, but they have used no morbidity indicator. I think that ‘vaccination coverage study’ more appropriately describes this work.
Methods

- It is not clear which physicians were studied. When the authors speak of primary healthcare physicians, do they refer to general practitioners or to those working in primary outpatient clinics (often dedicated to specific activities, like vaccinations)? This is important, because the former situation requires a trusting relationship between doctor and patient, much more than the latter, but the authors seem to have studied physicians working in primary care centres. Even in this case, more information about the Spanish context would be helpful: who administers vaccines? are the vaccines paid for by the people who receive them? is the primary physician’s request needed?

- More specific information should be provided about the items used to assess the physicians’ knowledge about, opinions of and attitudes towards influenza vaccination, as well as about how the authors managed to reduce to a binary yes/no response the answers the doctors gave to the multiple choice (5 categories) questions they were asked.

- Most of the results could have been influenced by the selection of physicians included in the study. The authors do admit this challenge, but they have not used all the appropriate indicators to assess the selection. They should compare the vaccination coverage between the 7 included and the 10 excluded regions and between the participating and non-participating primary care centres in each included region. The authors performed a regression analysis of the characteristics of the responding physicians (34.4% of those invited) against vaccination coverage of the elderly but they did not analyse the differences between responding and non-responding physicians for the characteristics that might be linked with a propensity to vaccinate, apart from age and sex, which did not differ substantially in the two groups. The authors could use the data of those who failed to complete the survey to analyse the characteristics of non-respondents. In conclusion, the assessment of the possible selection of participants is really incomplete.

- No difference was found between the groups of physicians who responded and those who did not, even for the vaccination coverage of patients. These results, together with the important influence of the region on vaccination coverage that emerged in multivariate analysis, suggest that the outcome depends on many other factors with more weight than physician-related factors. In conclusion, I have no objection to the authors’ choice of studying the physician-related factors as main exposure; but to study this exposure, they should adopt a different study design, in which the association between physicians’ characteristics and vaccination coverage would be stratified according to vaccination coverage at the regional or primary care centre level. Multilevel analysis could be an alternative strategy, power permitting.

- Since they studied only one year, the authors did not assess the effect that the pandemic H1N1 influenza had on people after 2009; but among the other factors influencing coverage is the information about vaccination provided by the mass media. In other words, I suggest that the authors pay more attention, in this observational study, to replicating all the factors that others have used in
community trials to make treated and untreated groups as similar as possible, with the sole exception of the main exposure.

- Although they evaluate the contraindications to vaccination in physicians, they do not do the same for the elderly, although I suppose that this information could be provided by the primary care centres.

CONCLUSIONS

- The authors discuss only those vaccination-associated factors that interested them: the region under consideration and the possible influence of other unanalysed factors were not considered;
- the authors do not discuss the feasibility of their proposal of increasing the vaccination of unwilling physicians;
- update programmes for health operators are a generic indication here, unsupported by specific data (no questions about knowledge of pandemic influenza were included in the questionnaires). Moreover, opinions (unlike habits) are rarely changed by introducing forced behaviours. If the authors think differently, they should discuss this point more exhaustively;
- discussion about vaccination coverage is scanty: the authors do not provide detailed comparison of Spanish data (which are rather low) with data from other countries, or with the coverage threshold recommended in international guide-lines;
- the possible increase of 2% in physicians’ vaccination coverage would, of course, be all to the good, but it hardly represents a worthwhile aim and no estimate of the possibly subsequent effect on patients’ coverage is given. On the other hand, if physicians’ vaccination were the most important factor, an alternative intervention could be a public, free, direct vaccination campaign to assure that people, including patients, are in a position to make an informed and healthy choice. This point too is insufficiently discussed.

In conclusion I think that the results of this study do not support the authors’ conclusions.

MINOR COMMENTS

- The pilot tests should be moved from the Variables subsection to the introductory part of Methods.
- The regression results should be shown in terms of % of vaccination coverage in all the tables.

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, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:
I declare that I have no competing interests