Reviewer's report

Title: Predictors of pneumococcal vaccination among older adults with pneumonia: findings from the Community Acquired Pneumonia Impact Study

Version: 1 Date: 12 April 2010

Reviewer: Catherine A. Lexau

Reviewer's report:

Major Compulsory Revisions
This is a well written paper, with the outcome of interest clearly defined as self-report of pneumococcal vaccination among older adults from a defined population in one Ontario community, all of whom had clinically diagnosed community acquired pneumonia (CAP). About 34% of the participants who responded to the question on pneumococcal vaccine were age 60-69 and 66% over age 70.

(1) Use of this particular self-reported measure presents a major methodological problem in this analysis, particularly for persons in these age groups. Macdonald et al. (1999) found the specificity of self-report of pneumococcal vaccine to be 0.53 for patients over age 65 from a Veterans Affairs medical center and 0.76 for managed care organization patients in the same age group. In the latter group it was determined that false reports of vaccination were more likely when the vaccine was given more than 2 years prior to the self-report. It is true that self-report of pneumococcal vaccination is a measure used to monitor population uptake of this vaccine, for example, in the U.S. Behavioral Risk Factor Surveillance System. However, in this assessment, the goal was to identify factors predictive of pneumococcal vaccination. With this high likelihood of misclassification of the outcome, the validity of the study is questionable. Perhaps some other validation of the outcome (pneumococcal vaccination) was undertaken, or other literature supports use of this self-reported measure, but this should be addressed.


Minor Essential Revisions
(2) Even though they were standardized, the use of self-reported assessment measures may have led to uncontrolled confounding of the reported associations. For example, poor memory of pneumococcal vaccination might occur more often among participants who also had poor or inaccurate recall of other factors such as comorbid diseases. Somehow this should be addressed, at least as a possible weakness of the study.
(3) These are details that should be included in the methods section: full spelling and/or citations should be given for assessment tools (SF8, Barthel Index, Lawton). Dates (specific months/years) of data collection should be included.

(4) The extent to which patients agreed to participate at the point of recruitment is unclear. Did they agree to be contacted for a phone interview? What was the total number recruited, and were there any recruited who did not complete a phone interview? Were any reasons for drop-out available to investigators?

Discretionary Revisions:

(5) Most of the quality of life and social support measures assess the participant’s current status; but the outcome of interest is past pneumococcal vaccination. I think it would be best to justify this or else describe this as a possible limitation of the study.

(6) It would be better to include more specifics in methods of age eligibility (assume 60+ years) and whether only community-living adults were included. (Does CAP mean those living in long term care facilities/nursing homes were excluded?)

(7) It appears to me that type I error was possible in the analysis. Perhaps it would be good to review the number of associations tested, and determine a means of limiting this possibility, if appropriate.

(8) The discussion would be strengthened by consideration of the meaning of the multi-variable findings as a group, and/or from the standpoint of confounding. Although all factors in Table 2 were judged as contributing to the best model, I felt that an overall message concerning these various risk/protective factors was missing. I would be interested in the authors’ assessment of why the influenza vaccine-pneumococcal vaccine association was stronger in the adjusted vs. univariate analysis.

(9) Some paragraphs describing the possible reason for each individual finding included in the final model also seemed somewhat speculative, especially those covering social support, pain and religious faith.

Acceptance of paper:

- Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions --e.g. report evidence from within the data, or from other studies that self-report of pneumococcal vaccine is a more specific measure than identified in the MacDonald et al. study cited.

Or

- Reject because scientifically unsound

**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.