Reviewer's report

Title: A 10-year time-series analysis of respiratory and cardiovascular morbidity in Nicosia, Cyprus: The effect of short-term changes in air pollution and dust storms.

Version: 1 Date: 19 February 2008

Reviewer: Alain Le Tertre

Reviewer's report:

The topic of the manuscript is original as only few papers are trying to quantify dust storm impact. They use a large number (too many?) of models looking at effect by age, sex, several ways to define season, non-linearity... Part of the results as the authors suggest could be the resultant of spurious associations, but consistency observed give credits to the main findings.

Major Compulsory Revisions

If the methods is well described and appropriate, some points remain unclear.

Identification of dust storm days. Three methods are described. The last one identifies days as outliers using a predictive model of levels of PM10. How the authors define an outlier? Days not included in predicted + 2SD?

On statistical analyses, authors investigate effect of PM10 across quartile. It is not clear whether these quartiles are based on raw data or if, as it should be, they are coming from PM10 series adjusted on other effect modifiers (season, temperature...). clarifications are needed.

Minor essentials revisions

In such data, one can expect some overdispersion in Poisson distribution. Did the authors check for such in order to correct if necessary, confidence intervals of their estimates?

Statistical analyses, effect modification by season. The authors put an interaction when temperature was higher or lower than 20 or 30 Â°. Only results from 30 Â° are presented. The authors should also present their results for 20 Â°. This will help to understand why different patterns are observed on admissions regarding season definition.

Discretionary Revisions

In the table 1, and in regards with definition of season by temperature, the temperature should also be presented for cold and warm months.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.