**Reviewer's report**

**Title:** Cancer mortality differences among urban and rural residents in Lithuania

**Version:** 1  **Date:** 25 June 2007

**Reviewer:** Paola Pisani

**Reviewer's report:**

**General**

This is a simple and interesting paper in the context of cancer control: it examines trends of cancer mortality for the major sites to identify strengths and weaknesses of the health system in a country that during the period studied has seen a significant economic improvement (http://www.unece.org/stats/trend/trend_h.htm). Although the analyses show persisting inequalities between urban and rural populations, there are also positive signs of improvement with the decline of mortality from breast and, even more unexpected in Eastern Europe though quantitatively not as large, colorectal cancer.

But the most remarkable observation is the decrease of lung cancer in men and stable rates in women. As the authors recognize in the discussion mortality from lung cancer can only decrease as a result of falling rates of smokers in the population. It is well documented however that the effect on mortality is delayed by 15-20 years. Steadily falling lung cancer rates from 1992 would mean that the prevalence of tobacco smokers in the population was already falling in the 70s. This would hardly be a chance phenomenon. Has there been any active intervention to discourage smoking? Or is it an artefact due to worsening of the mortality reporting system? Actually there does not seem to be a decrease in incidence between 1990 and 1995 based on the registry data (www-dep.iarc.fr, Cancer Incidence in Five Continents vol VII and VIII). Also, the mortality data from the WHO bank from Lithuania are not entirely consistent with those presented here: colorectal cancer in males (national rates) seem on the increase during the period; and the breast levelled off. I wonder if the difference is due to different denominators about which the authors do not say anything in the methods. Note that the population of the country has decreased in size during the study period http://www.un.org/popin/data.html and this could be a cause of declining rates if an average population was used in the denominator of rates.

Is there a reason why mortality data were extracted from the cancer registry database and not from the national mortality database?

In conclusion: the material is interesting but the authors should provide better evidence that the data are sufficiently complete.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. In the method section, describe and give reference for the denominators used in the analysis.
2. Would be useful to have the numbers of deaths for example at the beginning and end of period (can be added in the graph).
3. Describe differences between mortality produced by the cancer registry and included in the WHO database;
4. The manuscript would benefit from some editing. Two sentences in particular:
   a. in “methods” “The cancer registry produces more extensive cancer statistics…” is irrelevant;
   b. “discussion”, 2nd page last paragraph from bottom of page: “In last decades the respiratory cancer deaths increased in recent years…” is unclear.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

5. The numbers in figure 2, females, are not those quoted in the text.

Discretionary Revisions (which the author can choose to ignore)

6. The addition of incidence data would substantially help the interpretation.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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 declare that I have no competing interests.