Reviewer's report

Title: Population Mortality during the Outbreak of Severe Acute Respiratory Syndrome in Toronto

Version: 1 Date: 7 December 2006

Reviewer: Gerardo Chowell

Reviewer's report:

General
In this paper, the authors conclude that the SARS epidemic in Ontario, Canada did not have a significant impact on population mortality. The authors use Poisson regression and interrupted time-series analyses. The article is well-written. However, there are several issues that need to be addressed in order to support the main conclusion of this paper. In particular the authors need to compare quantitatively and graphically predicted with observed results from their time-series analysis. A visual inspection of their mortality time-series indicates that a significant increase in mortality occurred during weeks 24-25 of 2003 relative to years 2001 and 2002.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
The interrupted time-series analyses undertaken by the authors needs some more work. The authors need to show the mortality time-series predicted by their analyses and compare with the observed mortality. From Figure 1, one can see a significant increase in mortality in 2003 around weeks 24-25 relative to mortality in 2001 and 2002. However, the authors claim no significant increase in mortality during the SARS outbreak in Ontario, Canada. This might be the result of the four-week lag chosen by the authors to the pulse-function effect used in their interrupted time-series analyses. The authors should conduct a sensitivity analysis on this lag because changes on this could lead to different conclusions. Also, how the adjustments on seasonality were performed were not clearly explained in the text. Claiming that the time-series analyses did not reveal significant change in mortality is not sufficient. This statement should be supported quantitatively.

Data of the population of Ontario outside the Greater Toronto Area are not shown.

More informative figures: The authors are encouraged to plot the mortality curve in 2003 and the mortality curves in 2001 and 2002 with the corresponding 95% confidence intervals. This plot will help reveal any significant increases in mortality during the SARS outbreak.

The following studies are relevant to this study:
- Lee et al. BMC Public Health (2005). The immediate effects of the severe acute respiratory syndrome (SARS) epidemic on childbirth in Taiwan

The end date of the SARS epidemic defined by the authors to be July 2, 2003, the date that WHO removed Toronto from the list of SARS-affected areas does not match the date indicated in the figures.

Figures 1 and 2 appear to be exactly the same. Figure 2 is supposed to show weekly mortality rate per 100,000 population in the Greater Toronto area.
Discretionary Revisions (which the author can choose to ignore)

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

Declaration of competing interests:

I declare that I have no competing interests.