Reviewer’s report

Title: Social factors related to the clinical severity of influenza cases in Spain during the a (H1N1) 2009 virus pandemic

Version: 3 Date: 19 December 2012

Reviewer: James Hadler

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This is the review of a resubmission of a paper previously reviewed 5 months ago.

This paper describes the results of a multicenter case-control study to determine individual and social determinants of who was hospitalized with the 2009 pandemic strain compared to who had confirmed infection that did not require hospitalization. The main findings were that the individual factors non-Caucasian ethnicity, having co-morbid conditions and having visited the health care system within the previous 7 days; and the social factors of having not received “preventive information,” having lower education level (no secondary or higher education), household crowding increased the risk of being hospitalized with confirmed influenza.

Overall, this is an interesting study, one of the few attempting to determine risk factors for hospitalization among those with infection. Others have attempted to determine risk factors for being hospitalized among those in general population. Thus, instead of measuring some combination of risk of getting infected and risk of getting hospitalized, this study focuses on factors leading to hospitalization among those who get exposed and infected, a strength. In this light, it is particularly interesting that non-Caucasian ethnicity, and the social factors listed were independent factors predicting hospitalization.

In addition, the large-scale collaboration (15 different institutions) that was necessary for this large-scale study of 699 cases and 699 controls, its size and the use of multivariate analysis are strengths. Most of the previously raised issues have been developed. However, there are still several issues that should be resolved: one methodologic issue needs to be addressed, the discussion does not always focus on why an identified risk factor could result in increased probability of being hospitalized once infected, and some limitations are not mentioned that should be. All of these deficiencies fall into the categories of minor essential revisions.

Methodological issue (Minor essential revisions)

1. The Methods should state how missing values were handled. Based on the tables, it appears that if a case or control was missing information on a given variable, e.g., overcrowding, data on each of them was excluded in univariate analyses. It’s unclear if this carried over to multivariate analyses.
Discussion (Minor essential revisions):

2. p6, 4th paragraph. The discussion of why overcrowding might be a factor increasing risk of hospitalization ultimately turns to its being a measure of poverty, with poverty being the main variable. However, there is no discussion of why poverty might increase the risk of hospitalization once a person has influenza, all other factors being equal (e.g., prevalence of underlying conditions). Ideally, there should be. In my mind, the association of each SES variable with increased risk of hospitalization may be multifold: later healthcare seeking when illness is more severe; more advanced underlying conditions that aren’t either recognized or managed as well (esp by the patients themselves), lower threshold for admission for monitoring since patient may not have adequate support to monitor at home, etc.

3. p7, Discussion of limitations. Several limitations are not mentioned but should be: a) not all cases and controls responded to information on each variable. It is possible that those not responding were different than those who did respond; and b) the meaning of the finding that those more likely to be hospitalized were more likely to have recently used healthcare is unclear. Don’t know whether this is a marker of having more severe underlying disease or a marker that they more readily access health care.

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.

Declaration of competing interests:

I declare that I have no competing interests.