Reviewer's report

Title: A study of the occurrence of AH1N1 viral infection and the clinical features of symptomatic patients who received medical care during the 2009 influenza pandemic in central Mexico

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Reviewer: Massimiliano Fabbiani

Reviewer's report:

In this manuscript Castillo-Palencia et al. investigated the occurrence of influenza A H1N1 infection in Mexico during the 2009 pandemic period, analyzing hospitalization/mortality rates and peculiar clinical features in the pediatric and adult population. Despite other studies had previously investigated a similar issue, strengths of this research are the use of regional surveillance data, the very large sample of subjects tested, the analysis of both hospitalized subjects and outpatients, and the inclusion of both adult and pediatric patients. For these reasons, results are quite interesting and can be useful both for epidemiological purposes and for clinical management of patients with respiratory infections.

Some minor issues should be addressed before acceptance.

MINOR ESSENTIAL REVISIONS

1) Pag 2, Abstract: the sentence “Age in years was positively associated with the having the virus in those aged 0-14 years, but negatively in persons aged 15 years or more (0.97-0.98)” is unclear. Please reformulate, for example as follow (if this is the correct significance): “Most positive cases were aged 5-14 years and, in this subgroup, older age was positively associated with A H1N1 infection (95% CI 1.05-1.1); conversely, in patients aged 15 years or more, older age was negatively associated with the infection (95% CI 0.97-0.98”).

2) Pag 7, statistical analyses: infection rate is defined as “Infected cases confirmed by laboratory / Total number of persons screened”. However, not all patients screened had an available laboratory result (764 missing). Hence, infection rate should be defined as “Infected cases confirmed by laboratory / Total number of persons tested (with available laboratory result)” and results corrected accordingly in the “results” section and in table 1 (infection rate: 2767 / 6158 x 100 = 44.9%).

3) Pag 9, results line 1-4: authors compare hospitalization and mortality rates of the studied population to the same rates observed in Mexico, Canada and USA, but do not provide a statistical comparison; please test for statistically significant differences (for example by using Chi Square test) and provides p values.

4) Pag 9, results line 5: the authors refer to figure 1 for age distribution. However, from figure it is not clear the exact number (%) of patients in groups aged 0-14 and >15. Please describe it in the text and also report the percentage of male/female in the two age groups.
5) Pag 10, discussion: authors state that divergent hospitalization rates in different geographical areas seem to be related to different criteria used for hospitalization. However, it cannot be fully excluded a different viral pathogenicity and/or clinical severity of the infection in different areas. Indeed, mortality rate in USA is higher than that reported in the studied population (is this difference statistically significant? Please test with chi square test as suggested above). This alternative hypothesis should be briefly discussed.

6) Pag 12, discussion: an interesting finding is that “seasonal vaccination against influenza was related to protective odds for infection in the adult population”. This result is intriguing but should be better discussed. Other reports have previously investigated this issue, some suggesting a partial protection (Fabbiani M et al. J Med Virol 2011; Orellano PW et al Vaccine 2010; Johns MC et al. PLOS One 2010) while others not (Kelly H et al. Euro Surveill 2009; Larrauri A et al. Gac Sanit. 2011; Hardelid P et al. Euro Surveill 2011). These studies should be cited and eventually briefly discussed. Ref. 31 refers to a study performed before pandemic influenza A H1N1 spread and does not appear to add relevant information to the discussion.

DISCRETIONARY REVISIONS

1) Title: In my opinion, the title seems a little redundant. At the discretion of authors, it could be shortened as follow: “Occurrence of AH1N1 viral infection and clinical features in symptomatic patients who received medical care during the 2009 influenza pandemic in central Mexico”.

2) In the abstract and throughout the manuscript the terms “OR” and/or “95% CI” in parenthesis are often omitted; please always indicate for a better comprehension.

3) Pag 4, line 4: correct “stain” to strain.

4) Table 2 and 3: please include a column showing p values for crude or adjusted OR (at least for variables showing a statistically significant association)

**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