Reviewer’s report

Title: Investigation of an Influenza A (H3N2) Outbreak in Evacuation Centres following the Great East Japan Earthquake, 2011

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Reviewer: Jacques JG Gaillat

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Review of Investigation of an Influenza A (H3N2) Outbreak in Evacuation Centres following the Great East Japan Earthquake, 2011

J Gaillat

General considerations: to describe an outbreak of Flu in extreme situation such as the Tsunami sequels is original and gives information on the methods to investigate such situation, the ways to manage and to avoid the extension of the outbreak in such a difficult and extreme situation.

This paper is interesting and well written.

However it could be improve by giving more details in the method and results paragraphs to strengthen the discussion and conclusion.

1) Major remark. The main issue is about the measure of the number of cases and the magnitude of the outbreak.

The case definition is not well detailed, it seems to be only febrile patients. If it is the case the definition was very large. How many symptomatic patients (febrile) or had influenza like illness have been tested with POC, how many were negative. In the situation of a typical clinical influenza infection with a negative POC test, was a PCR performed as we know that sensitivity of rapid diagnostic tests is not so good and the diagnosis can be improved with PCR. What kind of tests are considered point of care in Japan. To address this issue is important because the outbreak can be underestimated.

Two PCR were described in the method paragraph to confirm influenza infection but in results only RT PCR is mentioned, it seems no real time PCR have been performed.

Why only 27/105 residues were tested, 22/27 (81%) were tested positive, how to explain this discrepancy, usually PCR is more specific than rapid diagnostic tests. If it is the case, we can have an overestimation of the number of false positive cases with regard to the POC test

2) Minor remarks

Results. If we count the cases joined with a link on the fig 2, they are 16 cases in EC B, which is less than the 43% of familial cases in the text (16/60 is 26%)/10/31 are mentioned in the EC C (31%) less than the 38% in the text. May be I don’t read the figure properly. The legend could help to better understand the
reading of the figure. The living in the same room seems to be the major reason to get influenza.

How many of the cases were vaccinated, the information is given only for B and C EC, with the highest AR, what was the vaccine uptake in the lowest AR in the other ECs, are differences within the age ranges to explain that the AR is also more frequent in adults < 65 y.

Discussion

Only physical barriers were implemented, why a prophylactic use of neuraminidase inhibitors has not been implemented?

It could be interesting to have data on the pre earthquake situation of the influenza epidemic in Japan, AR, death rate with regard to the age range.

The authors stated that the index cases were from outside the EC and was associated with the through search and rescue activities. If we consider this explanation how to explain the difference of AR between the different EC. Were the preventions methods followed in the same way in each EC.

The authors also propose as with Cholera in Haiti that influenza virus was introduced by forreign rescuers. To affirm this causal relation, the strains of influenza must be determined. I assume Cholera outbreaks is not the same thing.

Eventually this paper can be published in the journal after adressing the different issues raised in this review.

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' below