Reviewer's report

Title: Fever screening during the influenza (H1N1-2009) pandemic at Narita International Airport, Japan

Version: 2 Date: 6 January 2011

Reviewer: Lance Jennings

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The authors have accessed unique international traveller entry screening datasets obtained during the early stages and later stages of Japan’s public health border response to the 2009 pandemic, which has provided an opportunity to investigate fever screening at the border.

Discretionary Revisions

1. A reference for the original Japanese guideline (Page3/Line 13 ) could be included.

2. The authors claim that the purpose of the study is to evaluate fever screening as a countermeasure against influenza, (4/21-22) appears very broad.

Minor Essential Revisions

1. It would be helpful if the statement in the Background “the efficacy of entry screening in correctly detecting and diagnosing influenza cases is likely to be small, mainly because of the impossibility of detecting incubating individuals…” be clarified to ensure that there is a clear differentiation between influenza the disease ( the title of the paper is “Fever Screening..”) and influenza infections (of which a proportion will be symptomatic and febrile).

2. Statistical presentations: presentation of sensitivity and specificity calculations consistently as a percentage may be more useful to public health and border and other authorities likely to find this research useful.

Major Compulsory Revisions

1. The clinical examination of passengers (Page 5) requires a little more explanation, as does the criteria for selection of passengers for rapid diagnostic testing. What samples & diagnostic test kits were used? It is recognised that the PPV of rapid antigen detection assays is poor in low influenza prevalence situations (the prevalence of influenza among the passengers is essentially unknown in this study) and that the sensitivity for the H1N1 2009 was generally poor. The PCR methods should also be referenced.

2. A flowchart should be included to clarify the two datasets and inclusion of the passenger subsets.

3. In the background, the terms used “confirmed cases who were detected and diagnosed..” are confusing and should be clarified. Clearly confirmed cases are those clinically diagnosed cases where ‘laboratory’ testing has been involved and this was only carried out during the collection of data-set 1. In addition,
consistency with the correct use of these terms throughout the manuscript is required as later (8/8) “we examined the sensitivity of fever for correctly diagnosing influenza among confirmed cases...” also, (9/16-17) “we also assessed the above-mentioned diagnostic performances” and (13/3) “Diagnostic performances of the infrared thermoscanners” imply (and is also stated at 14/16) that thermal scanning can be used to ‘diagnose’ influenza when these devices are instruments that measures surface temperatures.

4. The discussion focuses on the finding (14/17-) that the “sensitivity of fever (e.g. 38°C) upon arrival was estimated to be as low as 22.2% among confirmed cases...” As the confirmed case sample size is small, a general discussion is required on the proportion of influenza infected individuals whom are likely to have any fever and to what degree medication lowers the temperature. Further, the prevalence of influenza in the study population is essentially unknown. Thermal scanning generally performs well at detecting febrile passengers (and this study possibly indicates this with the detection of 73 other febrile passengers; but is not discussed).

5. Following on from (4), the conclusion that “The PPV of the infrared thermoscanners among the suspected fraction of passengers (n=1,049) was shown to be insufficient to detect febrile passengers” -appears inappropriate. The authors should perhaps limit their conclusions to their findings on the use of fever screening for the detection of influenza.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'