Reviewer's report

Title: Molecular characterization of influenza viruses collected from young children in Uberlandia, Brazil - from 2001 to 2010: presence of reassortment between 2002 strains

Version: 5

Date: 2 December 2014

Reviewer: Paul Horwood

Reviewer's report:

Major compulsory revisions

The purpose and methodology of this study was not completely clear:
1) Why was IFA used for the identification of viruses? There is no description of the methods used for cell culture isolation before the use of IFA for virus detection.
2) How were samples selected for molecular methods? Only the positives? This is not clear in the methods.
3) The most interesting part of this study was the detection of H1N2 from 17.9% (albeit only 5 samples) from the surveillance. It would be interesting to conduct more indepth sequence analysis of these strains.

Minor essential revisions

Abstract:
4) Line 29: though antigenic drift
5) Line 30: continue research
6) Line 32: presenting with acute
7) Line 42: sequences from vaccine strains

Background:
8) Line 59: to public health
9) Line 59-60: due to annual epidemics and the potential of pandemics
10) Line 60: of the Orthomyxoviridae
11) Line 61: types A, B and C
12) Line 61: can be further divided
13) Line 64: -- H1N1 and H3N2 do not just "predominate", they are the only strains with sustainable transmission in humans
14) Line 66: through antigenic drifty
15) Line 66: -- "every year" -- not actually true - new influenza strains that can evade the immune system or vaccination do not emerge every year
16) Line 77: strain information
17) Line 81: presenting with acute

Methods:
18) Line 89: presenting with acute
19) Line 90-91: There needs to be much better description of the surveillance procedures that were used in the collection of samples: What was the case definition? Were samples collected from inpatients or outpatients?
20) Line 93: Were the samples added to cell culture before IFA?

Results:
21) The results section is much too long and could be substantially reduced.
22) Line 138-145: The figures in this section are very confusing. It needs to be made much more clearer how samples were selected for molecular analysis. 23) Why was there not a breakdown of the detection of other viruses by IFA? If this component of the study is not important then I suggest it is removed completely
24) Line 192: "and in special A" -- not clear what is meant here
25) Line 197: "extra potential ' -- not clear what is meant here

Discussion:
26) Line 256-257: Many other studies reported much higher rates of influenza detection - why have you only mentioned the ones with lower rate of detection:
27) Line 262-264: The authors are making statements about severity of illness based on hospitalisation, but not information has been provided about the selection of cases. Considering the small number of cases and lack of information that has been provided they cannot make the conclusion that influenza is not a major cause of severe respiratory disease in children
28) Line 282-283: This is a strange reference -- influenza viruses commonly co-circulate with other strains. It is not clear why the authors have referenced this occurring in South Korea (which is a very long way from Brazil)
29) Line 287: "Probably a fourth viral variant" -- it unclear what the authors are referring to here. Are they suggesting the detection of seasonal H1N1?
30) Line 293-294: "these isolates did not have pandemic potential" -- on what basis was this conclusion reached? The authors only provide limited sequence data on these strains which is not enough to reach this conclusion
31) Line 321: annual

32) Table 2 - This Table should be provided as a supplementary file
33) Table 3 - This Table is unnecessary and the data should be described in the text

Level of interest: An article whose findings are important to those with closely
related research interests

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

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