Reviewer's report

**Title:** Acute Lower Respiratory Infections in [greater than or equal to]5 year -old Hospitalized Patients in Cambodia, a Low-Income Tropical Country: Clinical, Viral and Bacterial Characteristics

**Version:** 2 **Date:** 11 June 2012

**Reviewer:** Sonja J Olsen

**Reviewer's report:**

This is a very comprehensive paper describing the clinical and radiologic characteristics and etiologies of respiratory diseases in persons 5 and older in Cambodia. The data are from a study lasting 1.5 years from two hospitals. TB was the most common diagnosis (based on AFB), but viral pathogens (rhinoviruses and RSV) were also important. Vaccine-preventable pneumococcus and Hib were also relatively common.

**Abstract**

First sentence. What do the authors mean by “unclear.” Do you mean there are no data, the data are not good or what? I suggest you be more specific. There are some good data now coming out of the tropics on respiratory disease.

Consider using the word “independent” instead of “regardless.

Conclusions. It also appears that some viral infections were very common and worthy of mention. Maybe instead of saying further research is needed it would be better to talk about using the data to inform prevention strategies, such as the reduction of vaccine preventable disease.

**Background**

Again, I think there is more than one good study (Ref 4) on the etiologies of respiratory disease in the tropics. I would acknowledge the advances in the last decade.

Why did you exclude children <5 years?

**Methods**

Change “Cambodia is dominated by..” to “Cambodia has…”

Why were known TB, AIDS or cancer patients excluded? These people can have an acute respiratory disease.

Please clarify if the swabs were one throat and one NP on each person or was it either or.

Was whole blood immediately put into a blood culture bottle? How was it stored?

Multiplex often decreased sensitivity over singleplex PCR. Do you have any data on your assay?

How did you define an uncontaminated specimen?
Severity definition – did the authors consider any of the existing pneumonia severity indices for adults or how was this definition established? I assume your definition is based on data collected at presentation and that your findings could be used to assist in clinical management? If yes, it would be helpful to explicitly state that.

ALRI probably caused by a virus – I assume this is used only among patients without a PCR positive viral results? Please specify. Also, there is no definition for a viral diagnosis except for this one. It would be helpful to add that.

Data analysis – I don’t understand what the authors mean when they say “We restricted our analysis…” What exactly is excluded?

Results

Reference to Table 2 implies it is about mixed infections but it is not. The authors state that 61 patients died. Is this in hospital?

The authors say “high hear frequency.” Do they mean high hear rate or high pulse?

Since the lower limit of the age range is 5, I suggest changing “…aged 15 year or younger” to say “5-15 years old.”

Can the authors look at the relationship between wheezing and RSV (instead of just any virus)?

Discussion

TB findings – This suggests hospitalized pneumonia patients should all be tested for MTB. Is this currently the recommended clinical management guidelines? This is an opportunity to highlight the importance of testing or perhaps suggest a change in the guidelines if that recommendation is not currently there. Also, suggest changing the wording of “…was abbreviated by the patient” to “poor recall. I think what you are trying to say is that patients may not recall how long their symptoms have been occurring.

The discussion about testing for S. pneumonieae is important and the urine testing results are a good addition. Can the authors add one more sentence on the implication of this finding? In other words, if you take this into account, what would be the revised frequency of detection?

I suspect there is a reference for the sentence that culture is more sensitive than AFB for TB. This would be better than (data not shown).

I would add a sentence in the discussion about the possible decrease in viral pathogens due to the use of a multiplex PCR.

I think the discussion about severity could be strengthened if you bring in the idea of admission triage. In other words, if you can identify severe cases right away based on you criteria or associated symptoms, if there something you can do to improve outcome (e.g., send to ICU)?

I would like to see some comment on vaccine-preventable diseases. Are vaccines for pneumococcus and Hib being used in Cambodia or is this an opportunity to use these data to advocate for their introduction?
Reference # 14 is missing

Table 2. This table has some formatting issues so was difficult to read. Also, the numbers of the last 3 columns are really too small to interpret within any stability. I suggest cutting this table and just summarizing in the text.

Figure 1. This is interesting but in my view suggests that the CXR classifications are somewhat artificial or perhaps just not very useful as correlates of etiology. Yes, there are some differences. However, it is you do find all pathogens in every category.

**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:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.