Reviewer's report

Title: Early detection of tuberculosis through community-based active case finding in Cambodia

Version: 1 Date: 16 March 2012

Reviewer: Saskia Den Boon

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Major Compulsory Revisions

Methods

More information on the ACF activities is required. I do not completely understand how 13 ACF activities were conducted in 39 health centres: Were the 13 “activities” all the same? If so, was it the timing that made them separate activities, e.g. 4 health centres were visited during 1 ACF activity in January and then 6 health centres in the following ACF activity in March? What was the duration of an ACF activity? Were they for the same duration in each health centre, or were they of different duration? If the ACF activity was only for 1 day, was that considered to be sufficient – people might not have been able to attend on that specific day. How many times were the health centres visited? Only once, or more often? How much time was taken between informing the household contacts, and the ACF session?

Methods – programmatic information: which were the symptoms suggestive of TB that were considered? How were the household contacts informed – orally or with information leaflets or both? How many times were houses visited? Only once, or more often, for example if people were not home.

Discussion

The sentence “given that nearly 70% of passively detected patients…… by detecting older patients” is very unclear. It is hard to understand the comparison because of the overlapping each categories. It might be better to use the same numbers as already presented in the results earlier.

More interesting as the statement that it is important to note that smear grade is influenced by other factors, would be to know what kind of quality assurance measures were in place in the laboratory. Were a number of smear positive and smear negative slides selected for internal or external quality control? And if so, what were the outcomes of this? Did laboratory smear readers know if slides came from PCF or ACF suspects?

The reasoning in the last paragraph of the discussion on ACF having a sustained impact on smear-positivity should be worked out more. The authors are probably trying to say that the ACF activities might have increased awareness in the community (or at least among people in contact with TB cases) who might then
be more likely to present to the clinic earlier if symptoms of TB develop. However, the current reasoning that the reduction of the overall patient pool in the community leads to lower smear grades seems not to make a lot of sense.

Minor Essential Revisions

Introduction
Page 1 – 2nd paragraph: “……. rather than waiting for people to develop systems…..” should be symptoms

Discretionary Revisions

Methods
What were the predefined criteria for the X-ray? What were considered abnormal results? More detail is needed here.

Was ZN or FM smear microscopy done? I assume ZN but this should be specified.

The PCF group after is a lot smaller than the other two groups. How long after the ACF activities were completed were patients enrolled in the PCF-after group? In other words, is this for a very short period immediately after the ACF activities, or for a longer duration? Did the patients in the PCF-after group come from all the health centres, or only a few of the 39 health centres included.

It is mentioned that ethical clearance was not required. Perhaps the authors can state whether the data were anonymized, or some other information on how personal information was protected?

Results
It might be useful to provide a table with all the costing aspects that were considered in the cost-effectiveness analysis. From the abstract it is clear that mobile radiography units were used. Are the costs of running this mobile unit (e.g. a car or bus, driver, petrol) also include in the unit cost of $1.20 of an X-ray?

Was the difference in median age also significant? An inter-quartile range around the medians and a p-value for the non-parametric test of this comparison should be presented.

Is X-ray screening part of the diagnosis for PCF? Can the difference between the proportion of smear-positive and smear-negative patients between the two methods, be due to the screening and diagnostic method rather than being a true difference between the two patient groups? The X-ray screening used in the ACF group might detect a lot of TB suspects with X-ray abnormalities, of whom then few are confirmed by smear, while in the PCF group an X-ray might not be part of the standard diagnostic process, and diagnosis is predominantly based on smear microscopy. This could also be discussed.

Can a p-value be added for the comparison of 56.9% lower smear grades in the
ACF group compared to 42.7% in the PCF group?

Is transfer-out really an unfavourable outcome? Perhaps this should be excluded from the unfavourable outcomes, since it is not really a bad outcome, compared to default, dead, and failure.

P-values should be added to comparisons presented in the last paragraph of the results, were the ACF cases are compared with the PCF-after cases.

Discussion

What is meant by a delay-study? Perhaps the purpose and method of such study should be described, because every reader might have a different understanding of what such a study might involve.

Why do the authors conclude that further investigations are needed to clarify the benefits of ACF in early case finding and the costs associated, if this is what they themselves tried to show in this article? I thought that they concluded that the extra costs are worth it?

**Level of interest:** An article of limited interest

**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