Reviewer's report

Title: Different screening strategies (single or dual) for the diagnosis of suspected latent tuberculosis: a cost-effectiveness analysis

Version: 2 Date: 23 October 2009

Reviewer: Kevin Schwartzman

Reviewer's report:

This manuscript is substantially improved over the earlier version. Previous concerns have been clearly addressed in the revised manuscript and/or response to reviewer comments. Nonetheless a few points remain.

Major Essential Revisions

1. The presentation of the cost-effectiveness results in table 4, and the related description in the text, need some improvement. In particular, the number of expected TB cases is compared with a "no screening" scenario, to derive the number of cases prevented. In the same way, the authors need to compare the cost of each screening strategy with that of the same "no screening" scenario--because not screening creates downstream costs of treating active TB cases. At present, it does not appear that the authors have done this, and it would actually reduce the cost per case prevented by every screening strategy, relative to "no screening."

A related point is that in the base case scenario, the T-SPOT alone strategy dominates all others, i.e. it prevents the most cases and is cheapest. This is the key finding. The relative "savings per case prevented" are less important. If the most expensive strategy also was the most effective, it would be appropriate to show an incremental cost per additional case prevented, relative to the next most expensive/next most effective strategy, but that is not the case here.

2. If I understood the manuscript and supplement correctly, the authors assume that 80% of contacts with positive test results will begin preventive treatment with INH, and all those who start will complete it, unless they develop severe hepatitis. This is an extremely optimistic base case scenario, as most program evaluations have demonstrated substantially lower completion rates, often on the order of 50-60%. The authors get at this issue in sensitivity analysis by examining a 55% treatment initiation scenario, but the base case strikes me as too optimistic in this respect. At minimum this warrants explicit discussion.

3. The base case scenario assumes 100% specificity for the T-SPOT, based on 2 UK studies, while other studies have estimated somewhat lower specificity. One might consider adopting a slightly more conservative estimate for the base case scenario(e.g. the midrange). Again, I realize this issue was addressed secondarily, in sensitivity analysis. At minimum a) a threshold specificity below which T-SPOT alone is no longer cheaper AND more effective than all other
strategies should be reported, and b) this point should be mentioned in the discussion.

As mentioned previously, the authors have done an excellent job in revising their manuscript, and these remaining points should be relatively straightforward to address.

**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.