Reviewer's report

Title: Tuberculosis among health care workers in KwaZulu-Natal, South Africa: a retrospective cohort analysis

Version: 3 Date: 12 June 2014

Reviewer: Rodney Ehrlich

Reviewer's report:

General

The authors have responded to most of the comments made by the reviewers, and the manuscript has been strengthened. However, I have still some concerns.

Major compulsory revisions

1. Given that this is a retrospective cohort study, the definition of how the cohort was formed needs more detail under Study Setting and Sample. Are all staff at the hospital examined or otherwise “registered” by the occupational health services at these hospitals so that they have “occupational health medical records”? This needs to be stated explicitly.

2. Given the space devoted to Tables 2 and 3 (drug resistance and treatment outcomes), this descriptive component of the study needs to be included as an objective in the Introduction, since it is quite different from the other objectives.

(However, I continue to believe that inclusion of this information is a distraction from the important findings of this study given its original objectives. A separate paper or scientific letter covering this component would be preferable.)

3. The authors do not seem to have dealt with their findings with regard to occupation, viz. that there is no significantly elevated risk among clinical staff relative to administrative staff. Given the finding that working in Stores seems to confer the greatest relative risk, it suggests even further a pervasive risk of “facility related” transmission not limited to ward care. (Is there, for example, on site hostel accommodation for staff? What about eating or hospital provided transport facilities?). Also, the authors devote quite a bit of attention to the source of elevated risk in paediatric wards. Some thought should be given to possible explanations for the elevated risk in Stores, as well as what infection control would entail in such an area.

Minor essential revisions.

1. Although implicit, it is worth making explicit that community risk contributes to a substantial fraction of cases in hospital staff – around 50% on average, given the IRR of 2 on average. This means that even if on site transmission were well controlled, a substantial number of cases of TB would still occur among staff.
2. Although routine TB symptom screening of staff for symptoms may be “simple” at an individual level, it is not simple at a scaled-up programme level. (As evidenced by the fact that only 19% of HCWs at these hospitals were screened in 2010). Some acknowledgement of the difficulties of screening of all staff in large facilities or clinic systems needs to be acknowledged.

3. The Abstract needs to be adjusted to reflect the above points as appropriate.

**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.