Reviewer's report

Title: Prevalence of tuberculosis drug resistance in 10 provinces of China

Version: 1  Date: 7 September 2008

Reviewer: Helen Cox

Reviewer's report:

Major comments

1. The question is well defined and extremely relevant. There is a great need to further assess the extent of tuberculosis drug resistance in China, as in other high TB burden settings. Please update the estimated global number of MDR-TB cases to reflect the most recent report (number given is from previous WHO report).

2. The methods used follow those recommended by the World Health Organization. Since the study includes surveys conducted from 1996 to 2004, the methods used are not entirely comparable; in terms of sampling, validation of previous TB treatment status and quality assurance of drug susceptibility testing. While this information is available, it is not clear whether patients were interviewed regarding previous TB treatment in all surveys. The results suggest significant misclassification in some provinces where patients were reinterviewed. This information should be more clearly presented.

3. It is also not clear whether a second sputum sample was taken for culture and DST, after written informed consent.

4. The authors state that ethical approval was not sought for these surveys as they were observational. However, written informed consent was sought from each patient. There are some ethical issues around the treatment provided to the significant number of patients diagnosed with drug resistant tuberculosis through the surveys. Were the results communicated to either the patients themselves and/or treating physicians? Were the data used to adjust treatment regimens? More discussion of these questions is necessary.

5. Table 1 includes numbers of TB cases included in the 10 surveys, but does not include the total number of TB cases notified from each province during the study period. This information is important to gauge the proportion of TB cases tested over the study period. The population of each province is not clear; please define the units more clearly.

6. Table 2 is unclear as to what is being presented. Is this the adjusted percentage of any drug resistance and MDR-TB in each province among TB cases, or is this the actual percentages of drug resistant cases detected through surveys? It would be more appropriate to give actual numbers of cases detected in terms of numbers tested as well as provincial estimates of drug resistance.
Please explain in more detail how the resistance estimates were weighted and show the impact of this in each province.

7. It would also be useful to give actual estimated numbers of drug resistant cases and incidence of MDR-TB per province. Percentages can sometimes be misleading and estimated incidence of drug resistant TB is perhaps more epidemiologically meaningful. Please see reference Zager and McNerney BMC Inf Dis 2008;8:10

8. Please be consistent with regard to the use of decimal points and commas.

9. The data on isolates retested for drug resistance is not entirely clear. Please define ‘agreement’ and ‘concordance’ in this context, and present both in terms of different drugs and across provinces. Please also display how discordant results in some provinces have impacted estimates of drug resistance.

10. The second paragraph in the discussion suggests that the new results presented in this paper reflect the impact of retesting of strains at national level. However, this data is not clearly presented. Indeed, it seems that individual level comparison of strains tested in both laboratories was not available. This is a significant limitation and should be acknowledged. Given that concordance seems to be very poor for both isoniazid and rifampicin in Beijing for example, the authors could perhaps discuss the validity of surveys conducted with testing in provincial laboratories.

11. The percentage of previously treated cases varies greatly across surveys; the authors could discuss whether this is associated with the levels of drug resistance found. One would expect higher levels of relapse in settings with higher drug resistance.

12. Some discussion of how representative this data is for the provinces not yet surveyed would be interesting to the reader.

13. In the conclusion, the authors mention that the programmatic management of MDR-TB will be piloted in 2 provinces. Please mention these provinces and whether GLC approval has been granted or is pending. The numbers of cases approved for treatment would also be of interest to the reader.

Minor comments

14. Check sentence structure in first sentence of second paragraph in introduction.

15. Check sentence structure in first sentence of laboratory quality control (methods section).

16. Use of the term ‘hardly affected’ in first sentence of last paragraph in results section.

17. DTS in sixth paragraph of discussion
Level of interest: An article of importance 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.