Reviewer's report

Title: Birth cohort effect on LTBI prevalence, United States

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Reviewer: Robert C Horsburgh

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Discretionary Revisions

1. Figure one shows the change over time in birth cohorts between the two surveys. However, in light of increasing predominance of TB in the US among persons of foreign birth, it will be important to understand the trends over time among foreign-born persons. Therefore it is recommended that a second figure be added; this figure would also show LTBI by birth cohort and sample year, but among US-born persons in Figure 2a and among foreign-born persons in Figure 2b.

2. While it is possible that decreases in skin test prevalence indicate persons with latent tuberculosis who have developed anergy and are thus at increased risk of reactivation disease, it seems equally likely that such decreases might indicate persons who have either self-cured or been given LTBI treatment, which has been shown to ablate skin test reactivity in some cases (Tager IB, Kalaidjian R, Baldini L, Rocklin RE. Variability in the intradermal and in vitro lymphocyte responses to PPD in patients receiving isoniazid chemoprophylaxis. Am Rev Respir Dis 1985;131:214-20). Such persons might be expected to be at decreased rather than increased risk of reactivation disease. The discussion should address these possibilities.

3. Previous studies have demonstrated that about 10% of skin test positive persons lose reactivity each decade (Ferebee SH. Controlled chemoprophylaxis trials in tuberculosis. A general review. Bibl Tuberc 1970;26:28-106; Comstock GW. Epidemiology of Tuberculosis. Am Rev Respir Dis 1982;125:S1-S15). Are the authors’ results consistent with this rate of decline?

4. Skin test reactivity to nontuberculous mycobacteria (NTM) can lead to false positive tuberculin skin tests (Smith DT. Diagnostic and prognostic significance of the quantitative tuberculin skin tests. Ann Intern Med 1967;67:919-46). Is there any evidence that reactivity to NTM has changed between 1971-2 and 1999-2000? This should also be addressed in the discussion.

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.