Reviewer's report

**Title:** Comparing urine samples and cervical swabs for Chlamydia testing in a female population by means of the SDA method.

**Version:** 1  **Date:** 14 December 2009

**Reviewer:** Marek Smieja

**Reviewer's report:**

Major Compulsory Revisions: None.

Minor Essential Revisions:

1. Define all abbreviations in the abstract (CT, BDPT, SDA).
2. Abstract, page 2, line 2: Background…. WAS to evaluate…
3. Page 5, “Participants”. What number/proportion were symptomatic, attending for contact tracing, or had unprotected sex?
4. How many of the CT “true” positives were symptomatic women? Were a greater proportion of the discordant results among asymptomatic women? I would expect a lower chlamydial “load”, and hence greater proportion of discordant results, among the asymptomatic women.

Discretionary Revisions:

1. Table 1 would be easier to interpret as a 2X2 table, with Cervical specimens positive/negative along the top and Urine Positive/negative along the side. Inclusion of total positive and “true” positive after discrepant analysis would be an appropriate way of summarizing the results in an easily-understandable manner.
2. Table 2 is clear, but could be shortened by adding a column for “frequency”. Thus, for example, samples 3, 5, 6, and 10 have identical patterns and could instead be summarized as a frequency of 4.
3. I would present sensitivity/specificity data in a more conventional way (using a 2-test positive reference standard, i.e. conventional discrepant analysis) in addition to the latent class model. Most readers will not be familiar with the latent class model, and the results are very similar to the conventional discrepant analysis results (90% for cervix, 91.3% for urine).
4. My understanding of latent class analysis is that you need a minimum of 3 tests done. Only the discrepant samples had the 3rd and 4th test done, which is clearly a biased subgroup (generally the three or more tests should have been done on all samples, and should not be influenced by results of the other tests). Justify use of latent class modeling in this circumstance, model assumptions and whether they have been met.

**Level of interest:** An article whose findings are important to those with closely
related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests.