Reviewer’s report

Title: Rapid tests for the diagnosis of urinary tract infection (UTI) in children under five years: a systematic review

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Reviewer: Jim Beattie

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REVIEW FOR BMC PEDIATRICS 4562624174799152

RAPID TESTS FOR THE DIAGNOSIS OF URINARY TRACT INFECTION (UTI) FOR CHILDREN UNDER 5 YEARS: A SYSTEMATIC REVIEW

Whiting P et al

The authors present a meta-analysis on the predictive value of combination dipstix urinalysis and urine microscopy for the diagnosis of UTI in children and also review the relative value of different urine sampling techniques.

I think this is a very extensive and well-written review but I have some comments for the authors.

1. The title does not include reference to the fact that the paper deals with urine sampling techniques and merely highlights rapid tests for the identification of UTI. (Minor essential revision)

2. One of the main issues in regard to the use of combination dipstix urinalysis from the clinical point of view is the possible influence of young age on sensitivity, specificity, positive and negative likelihood ratios and this was the subject of a specific analysis in one of the publications reviewed (Gorelick M H and Shaw K N: Pediatrics 1999, 104: e54). Although the authors included analysis of co-variants relating to patient age, particularly < 2 years, in the methodology, I did not see any reference to this in the results or discussion sections. I feel this would be worth exploring. (Major compulsory revision)

3. I think the fifth paragraph on page 4 is a little unclear, I assume it is referring to combinations of dipstix urinalysis, eg leucocyte esterase, nitrite and blood/protein? (Minor essential revision)

4. The term “may be” in the third paragraph on page 7 when discussing the value of clean voided specimens of urine appears relatively weak and the statement that bag and pad specimens “may be suitable substitutes for SPA” appears to be at variance with the analysis presented on page 4. (Minor essential revision)

5. I feel reference to the use of microscopy in GP surgeries in the second paragraph on page 8 is completely impractical as it is a procedure that is now very little used even in paediatric A&E units. (Discretionary revision)

6. The term glucose is mispelt in figure 7 (Minor essential revision)

7. There is no reference in the results or discussion sections of the impact of urine centrifugation and gram staining despite reference to this in the methods section. (Major compulsory revision)