Author's response to reviews

Title: Methods For Identifying Surgical Wound Infection After Discharge From Hospital: a systematic review

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Author's response to reviews:

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To the editor

Re: MS: 1223656836934427 - Methods For Identifying Surgical Wound Infection After Discharge From Hospital: a systematic review.

We thank the reviewers for their further comments and are pleased that we have been able to respond positively to most of their concerns. We provide further responses below to some their outstanding queries.

Richard Platt

1) We have rechecked all of the validation studies included in the Bruce review and included an additional two reports of one study that contains useful data on post-discharge surveillance methods.

2) We appreciate the reviewers point and added further to two existing paragraphs:

Thus, a system based on a standard definition (such as that of the CDC), with a minimum of subjective criteria such as physician diagnosis of wound infection, needs to be developed.

We know that there is wide variation in, and limited agreement between health professional judgement regarding the presence of wound infection which limits the comparability of estimates based on subjective judgement. None of the studies that we examined which compared the classification of wound infection between differing groups of experienced health professionals found high levels of agreement between them.

Mary-Louise McLaws

i) table 3, Item 1

Note: This is now table 2 in the current version of the manuscript

This point refers to the appropriate spectrum of patients. By this we refer to this being a spectrum of patients that you would expect to undertake the test in clinical practice, i.e. persons of all risk categories to see how well the tests perform. This is considered a gold standard in diagnostic test methodology so that you can see how well the tests performs in persons of all risk groups. We have included information regarding the type of surgeries that the PDS was performed after in table 3. Authors of the studies have rarely been specific enough about the type of surgeries that they have included for us to judge whether the 30 day follow up period is adequate. As you rightly state some forms of surgery do result in infections that take much longer to manifest however the reporting of many these studies does not make it clear whether these type of surgeries were undertaken.

ii) Item 2

We would regard the selection criteria as clear if it was reported in such a way that the study could be replicated. Without further information from the authors of several studies this would not be possible.

iii) Item 3
We have added further information which we hope further clarifies our decisions.

iv) Item 4
As stated previously without full details of the surgeries that had been undertaken and then followed up we are unable to make a judgement for the majority of the included studies regarding the adequacy of follow-up time according to CDC guidelines or other standards.

v) Whilst we agree that the positive predictive value is the most clinically useful measure, it is highly influenced by the underlying prevalence (in this case of surgical wound infection) of the condition that is being screened for. As such they are potentially not the most useful measures in terms of the external validity of the study where people may be thinking of applying the surveillance programmes in settings with varying incidences of infection. Additionally they allow for the calculation of other clinically relevant information such as likelihood ratios. Likelihood ratios are not dependant upon underlying prevalence and may not over exaggerate the results as much as either the sensitivity, specificity or the positive predictive value.

vi) We can appreciate why these points are useful to consider. The problem is that judgements of this kind require specific knowledge of specific health service costs, and routine data collection systems which vary considerably across countries. As such we do not feel able to give the kind of specific information you have requested although we hope we have provided enough details so that readers can make these judgements for themselves.

We feel that we have used the most appropriate methodology available at this time, the QADAS tool, to judge the validity of the included studies. This tool provides specific guidance on the evaluation of diagnostic studies, such as these PDS studies.

We thank both reviewers for their helpful comments and hope that the revised manuscript is stronger as a result.