Reviewer's report

Title: Does vancomycin prescribing intervention affect vancomycin-resistant enterococcus infection and colonization in hospitals? A systematic review.

Version: 1 Date: 14 August 2006

Reviewer: Ebbing Lautenbach

Reviewer's report:

General

VRE has a significant clinical and economic impact. Optimal strategies for control of VRE are unknown. Control of vancomycin has been the most commonly employed intervention at the institution level to try to control VRE. The role of vancomycin use interventions in this regard is controversial.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Why was Medline not included as one of the search engines?

Which conferences were included when abstracts from conference proceedings were reviewed?

Did only one reviewer assess all the possible abstracts?

The simple comparison of composite data from the pre-intervention period and post-intervention period may provide a misleading assessment of the impact of the intervention. Segmented regression analysis (which assesses both the change in the rate over time in the outcome of interest, as well as the immediate change concurrent with the intervention) provides a more robust estimate of the impact of the intervention. It is unlikely that the authors could conduct these analyses for each paper based on the data available in each of the primary papers. However, did the authors assess whether specific included papers conducted segmented regression analysis? Two references which might be considered for inclusion in the manuscript (at the author's discretion) are: 1) Ramsay et al. J Antimicrob Chemother, 2003; 52: 764-71; and 2) 86. Wagner AK, Soumerai SB, Zhang F and Ross-Degnan D. Segmented regression analysis of interrupted time series studies in medication use research. J Clin Pharm Ther 2002;27:299-309

The authors review papers which all describe quasi-experimental (pre-post) studies. They allude in the results section to various characteristics of the quality of the quasi-experimental studies (e.g., confounding) but never comment on the fact that there are several well defined aspects of quasi-experimental study design which should be considered in assessing the validity of a given study. Two recent papers which focus on quasi-experimental study design in studies of antimicrobial resistance might be useful as references in better formalizing this discussion in the paper. The references are: 1) Harris AD, et al. Clin Infect Dis 2005;41:77-82; 2) Harris AD et al. Clin Infect Dis 2004;38:1586-91

The papers reviewed by the authors are clearly not in agreement in their conclusions. I believe the main strength of this systematic review is in highlighting the heterogeneity and limitations of the work done thus far. This is very useful in demonstrating how future work could improve on what has been done. As such, I think it would be useful for the authors to expand in the discussion on possible future areas for improvement in research in this area.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The summary of articles is valuable in nicely summarizing the available data. I am not sure the conclusion should be that VRE interventions have a potential role in VRE reduction. Only about half of the
papers reported a decrease in rates. I think the main take home message here is that this issue remains controversial. The most valuable message is that more research needs to be conducted in this area.

In the background, it is stated that VRE is associated with greater morbidity, mortality, and length of stay. While several studies have certainly shown this, others have not. It might be reasonable, to at least acknowledge that this remains an area of some controversy.

**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare I have no competing interests.