Reviewer's report

Title: MRSA carriage among healthcare workers in non-outbreak settings in Europe and the United States

Version: 2 Date: 28 March 2014

Reviewer: Stephanie Dancer

Reviewer's report:

General comments

Thank you for asking me to review this paper. It is a careful analysis of selected studies on MRSA carriage among healthcare workers in the non-outbreak situation. The paper is well written, informative and interesting, and I would recommend publication after consideration of minor comments listed below.

Minor points

Background

Page 3, 1st sentence, 1st paragraph: Please explain what you mean by ‘heterogeneously spread’....

Page 3, 1st sentence, 2nd paragraph: The nose is certainly the main site for staphylococcal colonisation, but transmission occurs via a number of mechanisms, not just hand contamination. I would suggest that you consider the role of the air and particularly the role of colonised staff with respiratory tract infections; the so-called ‘Cloud adult’ (Sherertz et al, A cloud adult: the Staphylococcus aureus-virus interaction revisited. Ann Intern Med. 1996; 124(6):539-47).

Aside from the effects of a cold, individuals differ in shedding propensity, with particular regard to sex and perineal carriage. See Solberg’s work from the 1960’s.

I don’t think that the role of colonised staff in MRSA transmission is controversial (3rd sentence, 2nd paragraph); we know it occurs, although at a lower rate than originally thought.

Page 3, 3rd sentence, 3rd paragraph: Persistent nasal carriers may also be suspected if they also demonstrate gastrointestinal carriage, e.g. positive perineal/rectal swabs. If you ignore the perineal reservoir, you risk missing up to one quarter of habitual carriers (Acton DS et al, Intestinal carriage of Staphylococcus aureus: how does its frequency compare with that of nasal carriage and what is its clinical impact? Eur J Clin Microbiol Infect Dis. 2009; 28(2):115-27).

Page 3-4: Re. decolonisation of healthcare workers – do the questions cover risk of mupirocin resistance?
Page 4: 1st paragraph: It is interesting that Germany imposes job limitations on MRSA positive healthcare workers; is this standard procedure for other European countries?

Methods

Were there any particular reasons for not including MRSA screening studies of healthcare workers from countries outside USA and Europe, aside from time and resources?

No methodological concerns, although I am not a statistician.

Results

No concerns

Discussion

Is it possible to further explore the link between MRSA carriage prevalence among healthcare workers with national MRSA rates for different European countries? Perhaps using the EARSS database? It is presumed that countries with higher rates of patient MRSA would experience higher MRSA carriage rates among healthcare staff.

Page 7: 5th sentence, 1st paragraph: The 4.3% pooled prevalence reported in this study is very similar to the result from the previous review quoted, which included worldwide data and outbreaks. Would the authors like to speculate as to why this should be?

In conclusion, a well prepared review containing useful information, which I would recommend for publication.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.