Reviewer’s report

Title: Assessing the role of undetected colonization and isolation precautions in reducing Methicillin-Resistant Staphylococcus aureus transmission in intensive care units.

Version: 2 Date: 22 July 2009

Reviewer: Maria Clara Clara Padoveze

Reviewer’s report:

July 20th, 2009

Dr Melissa Norton
Editor-in-Chief

Dear Dr. Norton:

Follow my review report of the paper entitled “Assessing the role of undetected colonization and isolation precautions in reducing Methicillin-Resistant Staphylococcus aureus transmission in intensive care units”, by Kypraios et al.

Best regards,

Maria Clara Padoveze
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Department of Nursing in Public Health.

1. Is the question posed by the authors well defined?
Yes.

2. Are the methods appropriated and well described?
The methods are appropriated for the objectives proposed.

Minor Essential Revisions

The description of methodology would be clarified if the authors give more information about:

a) If there is homogeneity regarding the number of staff caring for the patients in every ICU (nursing-patients and physician-patients number relationship). In the real world it is a very important component to understand the efficacy of any measures for microorganism transmission control.

b) The test sensitivity was done based on collected data from swabs following first positive culture. The methods description state that the screening is done on weekly bases in ICU; while the median length of stay is around two days. How many swabs were supposed to be collected per patient after the first positive
cultures? What is the interval between samples? The table 1 shows the number of swab per patient but it is not clear what is the number of swabs collected after the positive one.

c) What is the protocol for collecting samples from other sites than nares? Please clarify which types of cultures were included in the group of “any body site” (blood, catheter tip, wound, urine, or skin cultures?)

d) Please clarify the assumption in the model for the HCW compliance to contact precautions. The 70% of HCW compliance cited in the discussion (references 9,10) was used in the model? The compliance of HCW is assumed to be the same for any professional category (ex.: nurses, physicians, others…)?

e) It is not so clear the components on which are based the estimation of B0, B1 and B2. This is the main subject to better understand the results of the present study.

f) What was the role of the length of stay in the model? It was assumed to increase the risk for transmission as any increment of the days of stay?

g) Phidden and Pwait should be first explained in the methods section and not only in the results section.

h) The method for comparison of isolation effectiveness (B1/B2) should be described first in the methods section and not only in the results section.

Please clarify the statement: “all other analysis was performed using programs we wrote in C”

3. Are the data sound?

Yes.

Discretionary Revisions

a) I suggest grouping some data from tables aiming to be more suitable for readers (ex.: table 4 and 5).

b) I suggest clarify the epidemiological plausibility for estimation of 30% chance that isolation actually increases transmission.

Minor Essential Revisions

a) Regarding the statement “In the two general surgery ICUs, however, there was no evidence to support the effectiveness of such measures, and in these cases several models estimated that there was at most a 50% probability that B1 exceeded B2”, however table 3 shows probability much less than 50% for GS1 and above 50% for GS2. Why both ICUs were considered in the same level of probability?

b) Regarding the statement “…we recognize that these estimates have considerable uncertainty despite including over 11 ward-years of data…” There is no mention for this period of data collection in the methods section.
4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes

5. Are the limitations of the work clearly stated?
   Discretionary Revisions
   
a) Some limitations of the study were discussed, but not in deep. There is no doubt about the role of baseline comorbidities as well the rates of devices use regarding the infection control in ICUs. I recommend that the authors present suggestions to overcome these limitations in the future studies.

6. Are the discussion and conclusion well balanced and adequately supported by the data?
   Yes.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   Yes

8. Do the title and abstract accurately convey what has been found?
   Yes.

9. Is the writing acceptable?
   Yes.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.