Author’s response to reviews

Title: An epidemiological and molecular study regarding the spread of vancomycin-resistant Enterococcus faecium in a teaching hospital in Bogotá, Colombia 2016

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REPLY TO REVIEWER’S COMMENTS:

REVIEWER # 1:

1. The authors have correctly answered all my requirements except those concerning the epidemiological analysis. This analysis is still unclear. The authors should add an epidemiological curve to visualize in which room(s) the 16 patients involved in the outbreak were located and when VRE colonization/infection occurred.

Reply: Thank you for your comment. Due to the high mobility of patients within the hospital, it was difficult to construct an epidemiological curve by rooms, so it was constructed by wards (Supplementary Figure 1). Nevertheless, if an exact location per patient is required, an Excel spreadsheet (Supplementary Table 1) now depicts this. A paragraph discussing this issue has now been included on Page 15, lines 324-329.
2. Second, the authors used the TPS algorithm already published (ref 26). The methodology and results are written more clearly in this latter article that I needed to read to better understand the methodology. This methodology cannot be fully transposed to the present manuscript because, in the case of the outbreak of P. aeruginosa, a WGS and SNPs analysis was performed and the evolution of the number of SNPs was taken into account in the temporality of the transmission. In the VRE outbreak, the molecular profile could only determine if strains are indistinguishable or not. Thus, the arrows indicating the direction of transmission from criterion 4 (Figure 5, part b) are not suitable. Only the colour of the profile is required and the arrows must be removed.

Reply: Thank you for pointing this out. Figure 5 has now been adjusted according to your recommendations.

3. Figure 5 is not clear because units do not appear. It is not clear where the patients were located when they were suspected of transmission. All arrows describing the way of transmission are black and some patients appear to be located in several wards.

Reply: Figure 5 was adjusted according to your recommendations. Figure 5 legend has now been rewritten for clarity (Pages 25-26, lines 587-603).

4. In addition, patients belonging to the same unit in Table 2 are not those connected by arrows in Figure 5.

Reply: Thank you, this is a very important point. This issue has now been clarified in line with comment #1 and the explanation can be found in Figure 5, Supplementary Figure 1 and Supplementary Table 1.

5. Figure 5 would be clearer with the legend in the figure as for the quoted article (26).

Reply: The figure 5 legend has now been corrected following your suggestion (Pages 25-26, lines 587-603).

6. From figure 5, we understand that P4 transmitted to P7 and P14 his strain but in the text (L290) the authors wrote that P4 was "exposed" to P7 and P14?

Reply: Thank you for your comment. The paragraph has now been rewritten for clarity (Page 14, lines 288-291).

7. “The authors discuss in the result section the possible ways of transmission from P2 to P7 and from P12 to P13 whereas the strain has not been typed or does not belong to the same genomic profile (L291-298). It has no interest”.
Reply: Thanks for your comment. This paragraph was deleted.

Other comments:

8. “L88: Rate instead of percentage”.
Reply: Thank you for your comment. The phrase has now been rewritten (Page 5, lines 88-90).

9. “L123: VRE has not become less pathogenic but has caused fewer infections”.
Reply: Thank you for your comment. The phrase has now been rewritten (Page 6, lines 122-123).

10. “L133-143: These data are results, not methods”.
Reply: Thank you for your comment. This paragraph was removed from methods and is now included in the results.

11. L321: The authors should add that some VRE clones are less disseminating than others. It is known that some clonal complexes like CC17 are more epidemiogenic than others.
Reply: Thank for your suggestion. The paragraph has now been rewritten as per your suggestion and four references were included (Page 15, lines 314-323).