Reviewer’s report

Title: Nasopharyngeal carriage, spa types and antibiotic susceptibility profiles of Staphylococcus aureus from healthy children less than 5 years in Eastern Uganda

Version: 1 Date: 30 Aug 2019

Reviewer: Shima Abdulgader

Reviewer's report:

Assessment criteria

General comment:
This is a very good, well written article describing the rates of S. aureus nasopharyngeal carriage amongst healthy children under the age of 5 years. The paper is worthy of publication should the authors address my comments below:

Abstract
Line 42: Since you are referring to MRSA being more resistant to non-beta lactams than MSSA please use the denominator for MRSA (45 not 99)

Methods:
There is no mention on the SCCmec typing, how and what protocol was used to type the MRSA strains. What was the statistical test used assess the significant difference between relative frequencies (i.e. how you generated the p-values)?

Results:
I understand that this is a nested study, but since the authors are comparing the genotypes between all the sites, it would be good if you recall the numbers of participants/isolates from the other two sites.
Figure 1: the font within the boxes looks unclear.
Figure 2: the dotted circles around the bars are distorting the figure, I recommend that the authors indicate the bars (of interest) with a symbol on top of each bar.

The authors should double check whether the y-axis is actually reflecting RF. I think it is reflecting numbers.
Line 168: use the denominator for MRSA (n=45) not for MSSA (n=99).

Line 179: in Figure S1 (the PFGE) at least 3 isolates with spa t064 did not cluster with the others. So nothing makes this observation worth mentioning. Perhaps a general description of the number of clusters observed and the diversity of the collection.
Line 192: italicize the word 'Spa'.

Discussion
Lines 229 and 230: Not only when the immune system is weakened, S. aureus could also be invasive if it enters a sterile anatomical site through skin infections or breach of a body barriers?
Lines 249-251: The concept here is vague please explain more clearly. Also the authors should
emphasize that the resistance profile between countries would very much depend on the different practices of drug use between the countries.

Line 255: Mupirocin is not only used to treat impetigo?? rephrase the sentence to perhaps include examples of other infections.

Line 259 and 260: How do we know that MRSA decolonization is not common in Africa? any studies showed that?

Just a personal opinion: Since t037 is a "dominant" strain in Uganda, and it was linked to SCCmec type I which is an unusual observation, since this strain is associated with the ST239 SCCmec III the Brazilian/ Hungarian clone. I think the authors should comment on this observation.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable
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