Reviewer's report

Title: High variability in the dosing of commonly used antibiotics revealed by a Europe-wide point prevalence study: implications for research and dissemination.

Version: 2  Date: 14 January 2015

Reviewer: Stefania Vergnano

Reviewer's report:

Major compulsory revisions
Methods need to be more details.

The inclusion criteria (e.g. infants from 0-90 days were included only), which antimicrobials were included (e.g. antivirals/antifungal included?), which routes of administration were considered need to be spelled out here, not in the results, otherwise the reader is not clear about what exactly has been reported.

PNA/PMA/GA bands need to be explained here: this are used frequently and are not explained, the authors should explain the reader what they are and why they are used in the context of antimicrobial dosing. Currently their use is confusing and appears to be random (E.g. line 206)

Line 110-114. Difficult to understand, the reader needs to know that neonatal doses depend not only on weight but also on the gestational age and post-natal age... this is not explained. Also maybe could be useful to add examples.

Introduction
Line 61 “age group” what does it mean? gestational age bands/ post-natal age groups

Results:
Line 129: please specify what is intended for higher level NICU.
Line 131: were BW and GA normally distributed? Otherwise a median and IQR would be better measures of spread.
133-139: Please separate the definitions and include them in the methods
Use PNA/PMA and GA more consistently

Discussion:
Can be shortened and the message clarified.
Initially the authors seem to imply that using the same dosing reference in Europe will improve dose prescribing then they affirm that the lack of hard data on PK/PD is lacking for a number of antibiotics in this age group, therefore there is discrepancy in the dose recommended. But finally they note that for some
antibiotics there is in fact good evidence base and (e.g. single dose gentamicin) but still poor adherence to guidelines. Why do the authors think this happen, how can it be improved? How should results be disseminated.

It would be helpful to add to the discussion whether any other studies on dosing are available e.g. from the US or elsewhere, are the dosing issues similar??

Minor Essential Revisions
For clarity please spell out all abbreviations the first time they are used even if there is an abbreviation list (including in the abstract e.g. NICU; CBW etc)

There are a few typos errors in the manuscript.

Figure 2 not sure whether this figure adds to the text.

Discretionary revisions

Figure 3 line 513, is the BNFC line representing the lowest recommended dose for pen G? It may be useful to have the lowest and the highest in 2 different colours here

may be interesting to have the list of all antibiotics used

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I am a researcher in neonatal infection and se of antimicrobial in this age group.