Reviewer's report

Title: Antibiotic use and resistance in emerging economies: a situation analysis for Viet Nam

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Reviewer: Erika Vlieghe

Reviewer's report:

Overall, this manuscript brings in a lot of new and interesting information on the situation of antibiotic resistance and use in Viet Nam, which very valuable and highly needed.

However, there are some major issues regarding the methodology and textual structure which need to be addressed.

Methodology: I am not convinced whether this is a genuine ‘systematic review’. It is perhaps also not feasible to perform a ‘systematic review on everything with regards to antibiotic use and resistance’ in a country. The search terms mentioned are rather limited and do not guarantee that everything has been found. One would expect also a clear break-down of n papers searched, found, classified, excluded,... which is lacking here. Also, I think the antibiotic resistance section brings up rather limited information for a systematic review. If the authors’ aim was to provide a genuine systematic review of white and grey literature, then it would be better to summarize more in detail resistance data in tables etc… I would suggest to remove the statement ‘systematic review’ and rather have the aim to give a good (though not exhaustive) overview of the most relevant issues.

In a review I would expect also room for gaps in the generated knowledge i.e. research gaps

Text and writing style: There is an imbalance between discussion and conclusions. Rather have either separate discussion section, or move discussion points towards relevant paragraphs, and keep a genuine synthetizing conclusion. Many paragraphs contain interesting and relevant information, but the ‘narrative line’ throughout the paragraphs could be improved. Several paragraphs are collections of stand-alone sentences, and several re-iterations are being made. This makes it difficult for the reader to absorb the content and remain concentrated with the content.

Miscellaneous: It is not clear why Nguyen Van Kinh is the first author of this paper if he/she did not contribute to the drafting, which one would expect from the first author?

Abstract
-It is unusual for an abstract to contain literature references, but I would leave this upon the editor’s decision
also the abstract would benefit from shortening.

Background
-please provide a little bit of background information on recent political, economical and social evolutions within Vietnam. For instance, referring to ‘the 1986 market reforms’ may not be clear enough for the average reader unfamiliar with recent evolutions in Vietnam. In addition, the background should provide information on the n of physicians and pharmacists in the country.

-sentence 2: the link between this sentence and the 2 other of this paragraph is not clear. It is also not necessarily bad that newer antibiotics don’t find their way easily to the market. The statement requires also a reference, as generics of newer antibiotics might become available pretty quickly.

-last sentence (‘we believe it can be useful…”): this seems rather appropriate for the discussion or conclusions, not for the background.

Methods
-please explain all abbreviations (e.g. WHO)

-why was this particular period chosen (1-1-1990-31-8-2012)?

-search terms seems rather limited to ensure a genuine ‘systematic review’. For instance, ‘antibitoic use’, ‘antibiotic prescription ‘ etc… were not included.

-in a systematic review one would expect a numeric overview of n articles/publications screened, withheld, classified in the respective categories etc. Also, the authors mention assessment of all studies for possible bias. I would expect some report or feedback on these ratings to help the reader interpret the validity of the given information.

Healthcare system
-paragraph 2: ‘there has been a substantial increase in healthcare costs’: pleas situate this statement: e.g. from which to which order of magnitude

-please explain also who is legally allowed to prescribe and dispense drugs

Drug regulation and supply
-please provide a reference to this ‘GPP’

-paragraph 4 (on DTC): please provide a reference for these statements.

-please mention if there is any information available on quality of drugs (substandard drugs), counterfeit,… If this information is not available, please mention so in the discussion or limitations’ section.

Patterns of antibiotic use
-paragraph 1: what is meant exactly with ‘bulk injectable antibiotics’?

-paragraph 2: high price of injectable cephalosporins: please provide evidence, as these drugs are often rather cheap in emerging economies…?

-paragraph 2: last sentence (‘As the risk of resistance…”): connection between,
this sentence and the rest of the paragraph is not clear.

- paragraph 3: please provide reference to ‘CDC best practice guidelines’
- paragraph 4: please provide URL to national stewardship website

Antibiotic resistance and infection control
- para2: pneumococcal penicillin resistance: please specify whether this is ‘I’ or ‘R’, provide MIC’s where available, provide n of isolates (i.e. denominators) on which these figures are based and also whether these data come from invasive versus colonizing pneumococci. A table summarizing the available information, n of isolates tested, methods used etc… would be highly welcome.
- para 3: S. aureus: please mention the n of isolates that were studied
- para 4: Gram-negative pathogens. Please be more specific than ‘an enterobacteriaceae study’. Clinical or environment, community or hospital, invasive or colonizing, number of isolates tested…?
- para 5: Enteric pathogens. The first sentence is too general (‘In Viet Nam MDR resistance is 50%’), please mention the year, n of isolates tested, nuance with other available data etc….

Provide also information on what is meant with MDR for Salmonella, Vibrio and E. coli (not necessarily the same)
- para 6. Too strong statement: Helicobacter has been associated with peptic ulcer disease, is not ‘the’ (only) cause of it.
- para 11: is any of the Vietnamese hospitals connected to the WHO Clean hands campaign?

Agricultural antibiotic use
- Last sentence (on shrimp aquaculture): please provide reference

Stakeholders recommendations
- suggest to provide a summary in the text of the recommendations made in table 3

Limitations
- mapping of incentive structure might require also good qualitative research!

Conclusions
- this does not read as a genuine ‘conclusion’, rather a discussion on its own. This section would benefit from substantial shortening, restructuring and inserting a more clear narrative line. I would suggest to move some of the content to the results-discussion part, and keep only the main conclusions and plans here. There are also several re-iterations and generalizations which can be shortened or removed.

Tables
- table 1: please provide URL and access date for the sources
-table 2: please explain ‘DTC’. Suggest to mention also public campaigns as an intervention.

-table 3: if access to non-medicated animal feeds is a problem for farmers, please mention and reference this in the text.

Figures:
-flow chart behind table 3: is this figure 1?
-figures 2 are blurred (not readable), not convinced of their added value.
-figure 3: please provide legends for the X and Y axis, and explain where the 4 common GNB come from (clinical isolates, blood cultures,...)

References
-please complete and/or provide URL and date accessed for the following incomplete references: 1, 6, 7, 10, 13, 14, 16, 17, 20, 22, 23, 25, 30, 40, 47, 50, 55

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

**Quality of written English:** Needs some language corrections before being published

**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