Reviewer's report

Title: A foodborne outbreak of gastroenteritis caused by Norovirus and Bacillus cereus at a university in the Shunyi District of Beijing, China 2018: a retrospective cohort study

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Reviewer: Nuria Torner

Reviewer's report:

Worldwide, about one out of every five cases of acute gastroenteritis that leads to diarrhea and vomiting is caused by norovirus. Norovirus causes 685 million cases of acute gastroenteritis, making it the most common cause of acute gastroenteritis worldwide. About 200 million cases are among children under 5, leading to an estimated 50,000 child deaths every year, mostly in developing countries. However, norovirus illness is a problem in both low and high income countries. Every year norovirus is estimated to cost $60 billion worldwide due to healthcare costs and lost productivity. It also is the leading cause of acute gastroenteritis outbreaks. Since 2002, GII.4 strains have caused the majority of norovirus outbreaks worldwide. Although in recent years, non-GII.4 strains, such as GII.17 and GII.2, have replaced GII.4 strains in several Asian countries.

Bacillus cereus is associated with foodborne illnesses also characterized by vomiting and diarrhea because of production of emetic toxin and diarrhea because of production of enterotoxin. There is no single "right" list, but every field epidemiologist ought to have a systematic approach to an outbreak investigation. Many components of the investigation are dynamic: case definitions, line listings, descriptive epidemiology, and hypotheses all can (and sometimes should) change with additional information. This is an observational study of the investigation of an outbreak caused by Norovirus and Bacillus cereus at a university in the Shunyi District of Beijing, China 2018.

Yet there are some considerations that have to be improved and corrected:

The English Language has to be revised thoroughly throughout the entire paper

There are some differences in the text uploaded as abstract and the one included in the manuscript (stall or window?)

Title: It should include the study type carried out
Background: First line: among who ???? should be deleted
Line 7 young (all the Young ? up to what age?)
Line 11: Infections? I suppose the authors means sporadic infections to differentiate from outbreaks
Line 15 contact with consumption? Or consumption ... contact with contaminated environmental surfaces would be more correct

Line 19-25 foodborne what??? transmission should be included
Line 29 ... on plants and soil or in plants and soil?
Line 46 Set the correct date order for month, day, year
Methods
Line 9: do not personilize ... delete we and restructure the sentence
Line 12: refers to Chinese law on outbreak investigations by public Health officials. I understand but the entire paragraph has to be explained in an orderly manner and a reference to the law or regulation that applies should be included.

Case definition:
Follow the who, what, where when rule. Any person in the University? that is too broad, case definition should pinpoint those exposed
Cohort Study: Replace by study design heading
Contacto to patients is an awkward expression, person to person secondary transmission is what you mean. Right?
Add the brand register to EXCEL® and SPSS® and company
Low case for p value
What is terminal water and source water?

Pg 5 lines 44-50 bacterial names in italics. a p is missing in polymerase chain reaction
What culture media was used?
How was the genotyping performed?

Pg 6: the attack rate is not given, or is it the incidence rate of 4.1% ... this is way too low for NoV, there are a % of carriers that could account for this % and the true cause being B cereus. Clarify attack rates and discuss the issue

Being such a large outbreak, ay be the case control design would be more appropriate.

Unhygienic procedures are not described, what risk factors have een detected in the investigation. This should be well stated in the methods and results

Again in Ethics approval State the reference for the mandate

In all, the outbreak is interesting and can give information relevant for future preventive measures

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.

No
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.

Not relevant to this manuscript

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

Not suitable for publication unless extensively edited

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