Author’s response to reviews

Title: Causes of death in hospitalized children younger than 12 years of age in a Chinese hospital: A 10 year study

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Author’s response to reviews:

Dear Editor,

I’m so grateful for your effort on my manuscript. Thanks a lot for the advice not only on the idea explanation but also on the language expression. I have answered all the questions from the reviewer and made some changes in the manuscript. A supplementary file is attached.

I also have a request. My email address is changed. My current official email address is zhuxiaodong@xinhuamed.com.cn. I have changed the email address on the website.

Response to the comments

Reviewer reports:

William Keenan (Reviewer 1): A ten year review. Identifies the cause of death of children 1 month to 11 years in age. Uses record system of a large Chinese referral children's hospital.

Some important relationships between mortality risk, septic complications and congenital anomalies are outlined.

Gender listed in the tables appears to be an important determinant but is not considered in the manuscript. Why?
There are more dead cases in boys than girls. This might due to the Chinese tradition of preference boys to girls, while more seriously ill boys were transferred to senior medical center. Brief explanation has been added to the second paragraph of the ‘Discussion’.

A bit more precision in the language of the manuscript could be helpful to the reader. Some examples are below.

Page 2, line 5: "...could provide improvements..." Might reword to "..provide insight leading to improvements..."

Response:
Changes have been made in the manuscript (the 2nd line of ‘ABSTRACT’).

Page 3, line 29-31: "...could ensure...". Might say "...could help improve high quality..."

Response:
Changes have been made in the manuscript (the 1st paragraph of ‘BACKGROUND’).

Page 6, line 1: "Table 2 shows..." Tale be is passive. Might say " The main causes of deaths are shown in table 1..."

Response:
Changes have been made in the manuscript (the 3rd paragraph of ‘RESULTS’).

Page 6, line 32: "...it was also the main..." Might reword to "...it remained a main..."

Response:
Changes have been made in the manuscript (the 4th paragraph of ‘RESULTS’).
Additional clarifications are recommended:

Page 8-9: lines 59 then 1: "This improvement may be..." Reword to clarify that the lower Chinese mortality contrasted to the global results might relate to the common Chinese practice...

Response:
Changes have been made in the manuscript (the 5th paragraph of ‘DISCUSSION’).

Page 9, lines 17-19: clarify that Wise cited deaths occurring in North America.

Response:
Changes have been made in the manuscript (the 6th paragraph of ‘DISCUSSION’).

Page 10, lines 12-17: I am confused why the lack of DNR orders relate to more children dying in the hospital. Clarify.

Response:
The Chinese society is used to regarding the parents guilty when they give up the aggressive therapy to their child, even if the young people suffered with advanced tumor. On the other hand, China has the ‘one child policy’ for a period of time. Parents are more inclined to make the decision of ‘fight to the end’, since the child is the only child of the family. These are the social and political reason of the DNR order situation in China. I wonder whether it is proper to explain them in the international medical paper.

Abraham Flaxman (Reviewer 2): This paper reports on the immediate and underlying cause of death from a large hospital in China. It provides useful information about the burden of disease, but needs additional information on methods to be as useful as possible.

Page 5, lines 1-14: I would like a lot more detail about how the direct cause and underlying cause were identified.

1. Does your hospital use a death certificate based on the WHO form?

Response:
Yes, we use the WHO form style. We have a Chinese version of it.

2. Did you use any tool, such as ACME or IRIS to code the death certificate entries?

Response:

No, we didn’t the electronic input tool for death certificates. We have been using the electronic tool to input the medical notes and records since 2010. But death certificate is a separate document of the patient. We do not have the electronic input system for it. We still write every certificate by hand for the patient.

3. How did you map from ICD-10 codes to the categories in this paper? (I suggest a table showing the mapping as supplementary materials)

Response:

We made a table of disease classification as a supplementary material. We added more explanation to ‘methods’. It is also explained in the response to ‘question 7’ below.

4. How did you select the broad categories for direct cause and chronic underlying cause?

Response:

Refer to ‘question 7’ below.

5. Could you also report on non-chronic underlying causes, such as pneumonia (as underlying cause)?

Response:

In the present manuscript we analyzed the role of chronic underlying in hospitalized dead cases. Pneumonia is classified, as acute condition might be complicated to the chronic conditions.

6. Why did you exclude injuries?

Response:

We did not exclude injuries. We classified injuries as accident.
7. Please describe your process of identifying chronic underlying disease. Is this from something analogous to Part II of the WHO certificate?

Response:

Brief description has been added to the ‘method’ in the manuscript.

The underlying disease is the diagnosis that is stated on the certificate. Sometimes it appears in the part I (c) or sometimes it is in the part II.

We reviewed the hospitalized medical records of every dead case for the current study. We confirmed very every diagnosis on the certificate and classified the underlying diseases as congenital abnormalities, tumor, immunodeficiency and autoimmune diseases.

Minor comments:

Page 3, line 50-51: "With in-depth investigations, these assessments could renew the sense of commitment to fatal conditions among healthcare staff." Interesting observation! Say more about this.

Response:

Brief statement has been made in the ‘Background’.

The explanations were originally in the ‘discussion’ and ‘conclusion’ part.

These assessments indicated that ‘most children died with chronic underlying diseases. Congenital abnormalities were the major chronic underlying disease in infants and a tumour was the main chronic disease in children more than one year of age. Infection diseases and therapy related-complications were often life-threatening in these children’. ‘With this information, healthcare providers could recognize fatal situation more efficiently and treat these patients more effectively’.

Page 4, line 54: why were deaths in the emergency department excluded?

Response:

Brief explanation has been added to the ‘method’.

As mentioned in the response to ‘question 7’, we confirmed every diagnosis of the certificate by reviewing every dead cases. The deaths in the emergency department are the cases with
extremely short hospital stay (less than 2 hours in our hospital). Since these patients were not admitted to the hospital, the medical records were very brief. The underlying diseases were not generally explored in these cases. So we excluded these cases.

Page 7, line 58: perhaps surprising that there is so little diarrheal death. is this an artifact of who ends up in this hospital? Or perhaps a testament to the quality of care that diarrhea cases receive?

Response:

We observed this distribution. As we explained in the manuscript, this result is consistent with the Chinese Health Statistics results [11,14]. The lower Chinese mortality might mainly relate the common cultural practice of boiling water. Other reasons may due to the introduction of rotavirus vaccine, and other hygiene practices.

Page 11, line 27: (and earlier): what is meant by "accident" in this context?

Response:

The accident means the accidental injury and event, such as traffic accident, falling of building, drowning.

Page 12, line 19: I strongly suggest that an anonymized dataset be made available for the purposes of future replications.

Response:

We have the anonymized dataset saved at our department office. We are analyzing other variables for further study.

Figure 1: this is interesting, and should be described in more detail in the methods section.

Response:

Some changes have been in the methods.

The authors' response letter has been included as a supplementary file.

Thanks

Xiaodong Zhu