PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Patterns of amenable child mortality over time in 34 member countries of the Organisation for Economic Co-operation and Development (OECD): evidence from a 15-year time trend analysis (2001-2015)
AUTHORS	Gianino, Maria Michela; Lenzi, Jacopo; Bonaudo, Marco; Fantini, Maria Pia; Siliquini, Roberta; Ricciardi, W; Damiani, Gianfranco

VERSION 1 - REVIEW

REVIEWER	Yana Gurevich Canadian Institute for Health Information, Canada
REVIEW RETURNED	01-Feb-2019

GENERAL COMMENTS	The paper analyses the trend of amenable mortality in children using Nolte and McKee's amenable mortality list. Analysis of amenable mortality among children is new information and is currently not available in the literature to the best of my knowledge. Below are my comments on the paper. Abstract 1. The study is described as an "observational longitudinal study" which it is not. This is a trend analysis of mortality statistics. 2. The conclusion needs to be strengthened to better reflect the implications of the findings Introduction 1. The introduction does not do a good job of introducing the topic. It talks a lot about factors that may influence children's mortality, but it discusses it from the population health perspective (socio-economic and environmental factors, risky behaviours, etc.). It completely misses the point that Nolte and McKee's amenable mortality list is very focused on the conditions amenable to the health care delivery and has very little relationship with conditions that can be affected by public health prevention strategies and broader health policies. The introduction should reflect the focus of the chosen amenable mortality list, focusing on "treatable" mortality. https://secure.cihi.ca/free_products/health_indicators_2012_en.pdf Furthermore, a concept of quality of life, while very important, is not relevant to the topic of amenable mortality. 2. The paper mentions the use of amenable mortality as a performance indicator by the UK, but it does not mention that other countries including Canada, Australia and New Zeeland are using it too, or that all countries have broadened the scope of amenable

	mortality to include conditions amenable to broader public health policies. 3. The paper mentions that the OECD is using avoidable mortality as an indicator of health system performance, which is incorrect. The OECD is evaluating this indicator and published a paper referenced in the introduction, but have not yet reached the decision to use an amenable mortality indicator. Results 1. The tables are massive. Authors are encouraged to come up with an approach to present the information in a more concise way. Discussion 1. The discussion is very general and draws conclusions and assumptions that are much more far-reaching than the study findings. For example, on p. 15, lines 28-60 and p. 16, lines 3-8, the paper discusses potential reasons for observed declines in mortality, making claims using single references that certain interventions are responsible for the observed findings. Such claims should be much more substantiated by the literature or less definitive language should be used. 2. Similar comment for the text on p 16, line 58-60 and p. 17, line 1-40. 3. The language used in the discussion is very judgemental. For example, p 15, line 21: "…Japan and Finland, which showed remarkable improvements in their performance…" or p 18, line 33 " There are tremendous successes of the public health system" 4. A potential way is to re-frame the discussion to focus on the fact that while there are declines in mortality the top reasons remain largely unchanged over the 15 year period, and identify opportunities for improvement. 5. Also the limitations section should address the "medical care" scope of the chosen definition of amenable mortality and mention that several counties (UK (and Eurostat which adopted the ONS definition), Canada and Australia) have broadened definitions for their avoidable mortality indicators to include deaths from conditions avoidable through primary prevention. Overall The level of English in the paper is overall reasonable, but the paper will definitely benefit from an English editor/writer. In summary, given the fact the paper provides new information on an important topic and the comments above, I recommend acceptance with major revisions, which will require a major re-write of the introduction and discussion sections.

REVIEWER	Anna Gage Harvard T.H. Chan School of Public Health
REVIEW RETURNED	01-Feb-2019

GENERAL COMMENTS	Thank you for the opportunity to review this paper. I have one more substantial comment for revision and several more cosmetic suggestions to clarify the study for the reader. Major comment: Looking at the list of conditions, it seems that not all of them are applicable to the child population of interest in this study. For example, maternal deaths and colorectal cancer are clearly non-issues, and including them in the list seems bizarre and suggests oddities in the data. There are also clearly

	nonsensical data in Table 3, including deaths for <1 year for measles and respiratory diseases that were supposed to exclude the under 1s. I recommend going back through the Nolte & McKee list and selecting only the conditions that are applicable to children, which will make a for a more informative study. Minor comments: Introduction: It is important to note, as you have, the other non-health system risk factors of mortality including socio- and environmental risk factors. However, the distinction between these and the focus of the paper— amenable deaths— is a bit muddied right now and could be better clarified. How many of the 6.3 million deaths referenced occurred in the OECD region? Methods: For those unfamiliar with Note and McKee's list, it would be useful to give a few examples of amenable mortality causes so that the reader doesn't need to automatically flip to the supplement. Results: The tables include too much detail in them to be easily digestible by your readers, and are better suited to appendix tables. I don't understand the main trends that you wish to show. I would drastically cut down the tables focusing on a clear story you want to tell, or show graphs instead. Similarly, the text of the results has too many numbers to be able to read and digest easily. Discussion: While your study focuses on mortality amenable through the healthcare system, it is important to note in the discussion that the mortality may be better prevented before the point of reaching the healthcare system through population health interventions like sugar-sweetened beverage taxes.

VERSION 1 – AUTHOR RESPONSE

REVIEWER # 1 – YANA GUREVICH

We thank the reviewer for the helpful comments.

Abstract

1. The study is described as an "observational longitudinal study" which it is not. This is a trend analysis of mortality statistics.

We thank the reviewer for noticing this inaccuracy. The text has been changed in the Abstract and on the very first line of the Discussion.

2. The conclusion needs to be strengthened to better reflect the implications of the findings

We thank the reviewer for her suggestion. The conclusions have been rewritten by pointing out the implications of our findings.

Introduction

1. The introduction does not do a good job of introducing the topic. It talks a lot about factors that may influence children's mortality, but it discusses it from the population health perspective (socio-economic and environmental factors, risky behaviours, etc.). It completely misses the point that Nolte and McKee's amenable mortality list is very focused on the conditions amenable to the health care delivery and has very little relationship with conditions that can be affected by public health prevention strategies and broader health policies. The introduction should reflect the focus of the chosen amenable mortality list, focusing on "treatable" mortality. https://secure.cihi.ca/free_products/health_indicators_2012_en.pdf. Furthermore, a concept of quality of life, while very important, is not relevant to the topic of amenable mortality.

The Introduction has been entirely rewritten, as suggested.

2. The paper mentions the use of amenable mortality as a performance indicator by the UK, but it does not mention that other countries including Canada, Australia and New Zeeland are using it too, or that all countries have broadened the scope of amenable mortality to include conditions amenable to broader public health policies.

We thank the reviewer for the information. The text has been amended accordingly (lines 137-141)

3. The paper mentions that the OECD is using avoidable mortality as an indicator of health system performance, which is incorrect. The OECD is evaluating this indicator and published a paper referenced in the introduction, but have not yet reached the decision to use an amenable mortality indicator.

We agree with the reviewer that the amenable mortality rate is not among the measures currently adopted by the OCED on a routine basis. Consequently, we have deleted this sentence.

Results

1. The tables are massive. Authors are encouraged to come up with an approach to present the information in a more concise way.

The same concern was raised by the other reviewer. We have converted Tables 1 and 2 into supplementary files and replaced them with bar graphs, and Table 3 has been simplified by collapsing disease categories that were not among the top 10 causes of death in 2011/15. Supplementary files have been reduced and reframed to better support our statements in the main text.

Discussion

1. The discussion is very general and draws conclusions and assumptions that are much more far-reaching than the study findings. For example, on p. 15, lines 28-60 and p. 16, lines 3-8, the paper discusses potential reasons for observed declines in mortality, making claims using single references that certain interventions are responsible for the observed findings. Such claims should be much more substantiated by the literature or less definitive language should be used.

We thank the reviewer for her suggestion. Based on this comment and as suggested by the other reviewer, we have completely rewritten the Discussion to focus on the fact that while there were declines in mortality, the leading causes of death remained largely unchanged over the 15-year period, and to identify opportunities for improvement. The implications of the findings have been stressed and a number of new reference have been added to substantiate our statements.

2. Similar comment for the text on p 16, line 58-60 and p. 17, line 1-40.

We thank the reviewer for her suggestion (please see above).

3. The language used in the discussion is very judgmental. For example, p 15, line 21: "…Japan and Finland, which showed remarkable improvements in their performance…" or p 18, line 33 " There are tremendous successes of the public health system"

We agree with the reviewer - a less definitive language has been now used throughout the text.

4. A potential way is to re-frame the discussion to focus on the fact that while there are declines in mortality the top reasons remain largely unchanged over the 15 year period, and identify opportunities for improvement.

We thank the reviewer for her suggestion (please see points 1 and 2).

5. Also the limitations section should address the "medical care" scope of the chosen definition of amenable mortality and mention that several counties (UK (and Eurostat which adopted the ONS definition), Canada and Australia) have broadened definitions for their avoidable mortality indicators to include deaths from conditions avoidable through primary prevention.

We agree with the reviewer and have acknowledged this limitation in the Discussion.

Overall

The level of English in the paper is overall reasonable, but the paper will definitely benefit from an English editor/writer.

We agree with the reviewer and have attached the language revision certificate.

REVIEWER # 2 – ANNA GAGE

We thank the reviewer for the helpful comments.

Major comment

Looking at the list of conditions, it seems that not all of them are applicable to the child population of interest in this study. For example, maternal deaths and colorectal cancer are clearly non-issues, and including them in the list seems bizarre and suggests oddities in the data. There are also clearly nonsensical data in Table 3, including deaths for <1 year for measles and respiratory diseases that were supposed to exclude the under 1s. I recommend going back through the Nolte & McKee list and selecting only the conditions that are applicable to children, which will make a for a more informative study.

We thank the reviewer for raising this point. We agree that some of the diseases included in the Nolte and McKee's list, such as colorectal cancer and pregnancy complications, are not substantial from an epidemiological perspective when applied to the child population. However, because Nolte and McKee did consider these causes of death too as amenable to healthcare at an early age (except measles and respiratory diseases in <1-year-olds), we decided not to exclude any conditions a priori and to look at their occurrence in order to make a "data-driven decision". We saw that no child died from benign prostatic hyperplasia over the 15-year study period, but all of the other causes of death were present, albeit rare. As a result, we did not operate any manipulation on the Nolte and McKee's list, so as to provide a thorough depiction of childhood amenable mortality for each country and each study period. Also, excluding some disease groups might imply thee need of including some others, which was not the focus of our study.

That being said, we acknowledge that our paper conveys too much information. For this reason, we simplified Table 3 by collapsing disease categories that were not among the top 10 causes of death in

2011/15. We also thank the reviewer for noticing that the % distribution of measles and respiratory diseases should not be 0 for the first age class, but should be “N/A” instead.

Minor comments

Introduction: It is important to note, as you have, the other non-health system risk factors of mortality including socio- and environmental risk factors. However, the distinction between these and the focus of the paper— amenable deaths— is a bit muddied right now and could be better clarified.

We thank the reviewer for her suggestion. Based on this comment and as suggested by the other reviewer, we have entirely rewritten the Introduction.

Introduction: How many of the 6.3 million deaths referenced occurred in the OECD region?

The estimated number of deaths in the OECD region, including Mexico and Turkey, was 117,000. This figure has been added to the text, as suggested (line 147).

Methods: For those unfamiliar with Note and McKee’s list, it would be useful to give a few examples of amenable mortality causes so that the reader doesn’t need to automatically flip to the supplement.

We thank the reviewer for her suggestion. The text has been amended accordingly (lines 169-174)

Results: The tables include too much detail in them to be easily digestible by your readers, and are better suited to appendix tables. I don’t understand the main trends that you wish to show. I would drastically cut down the tables focusing on a clear story you want to tell, or show graphs instead.

We agree with the reviewer that there was a lot to digest in the Results section. We have converted Tables 1 and 2 into supplementary files and replaced them with bar graphs; we have also reduced and reframed the supplementary files to better support our statements in the main text. As for the main trends of interest, we have now clarified that the data interpretation focused on the countries that had a mortality decline all over the study period (i.e., 2001/05 vs. 2006/10 and 2006/10 vs. 2011/15) (lines 183-185). The presentation of results has been changed accordingly (“Country-specific childhood amenable mortality rates” subsection) and should be easier to follow now.

Results: Similarly, the text of the results has too many numbers to be able to read and digest easily.

We have tried to simplify the result section and to convey more information in tables and supplementary files, which should appear easier to read now.

Discussion: While your study focuses on mortality amenable through the healthcare system, it is important to note in the discussion that the mortality may be better prevented before the point of reaching the healthcare system through population health interventions like sugar-sweetened beverage taxes.

We thank the reviewer for raising this point. Based on this comment and as suggested by the other reviewer, we have included this thought in the Limitations section.

VERSION 2 – REVIEW

REVIEWER	Yana Gurevich Canadian Institute for Health Information, Canada
REVIEW RETURNED	01-Apr-2019

GENERAL COMMENTS	The revised version addressed my feedback from the first review.

REVIEWER	Anna Gage Harvard T.H. Chan School of Public Health
REVIEW RETURNED	11-Mar-2019

GENERAL COMMENTS	Thank you for addressing my comments, I think the new presentation of results is substantially easier to follow facilitates much better understanding. I have no further comments on the manuscript.