Author's response to reviews

Title: Childhood deaths from external causes in Estonia, 2001-2005

Authors:

Marika Vali (Marika.Vali@ut.ee)
Katrin Lang (Katrin.Lang@ut.ee)
Ruth Soonets (Ruth.Soonets@hot.ee)
Marika Talumae (Marika.Talumae@ut.ee)
Andrej M Grjibovski (andrei.grjibovski@fhi.no)

Version: 2 Date: 21 June 2007

Author's response to reviews: see over
Reviewer’s report
Childhood deaths from external causes in Title: Estonia, 2001-2005
Version: 1 Date: 2 April 2007
Reviewer: Anders Eriksson
Reviewer’s report:
General
This is an interesting and well written paper on a subject of great importance. I think this paper should be published, but I suggest that the authors consider the following comments.

------------------------------------------------------------------------------------------------------------------------

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
Regarding the classification of intent (page 6 and Discussion), please clarify who made this classification, and on what basis. Autopsy findings are often of limited value in the classification of intent, but the circumstances – as reported by the police, or as presented in a verdict from a court of law – are crucial. For these reasons, intent can in many cases not be classified from autopsy findings alone.

Comment: The procedure of classifying the manner of death was made based on both the autopsy findings and police reports, where available. In cases which had reached court of law, and a verdict had been reached (it may take a couple of years in Estonian court system) a verdict was used. We attempted to describe this in the Methods section, but this might need further elaboration.

We have added further details in the text of the paper as described below:

Circumstances around death were analysed using police reports that accompanied the protocols, and, where existing, verdicts of the court of law were also analysed.

I strongly doubt that the statement “Aspiration was the most frequent cause of asphyxia...” (page 8, Discussion, Table 1) is correct. Aspiration is in most cases the result of post-mortem regurgitation, and is thus of no importance as a cause of death. But if aspiration in some cases should represent the *true* terminal cause of death, we anyway here discuss the *underlying* cause of death, i.e. in these cases the cause of the aspiration (e.g., intoxication, brain processes etc).

We agree with the reviewer’s comment. However, we used data as recorded in the forensic autopsy protocols. It is likely that the aspiration might be both the *true* and the *underlying* cause in most of the cases. In infants (where the majority of such cases occurred), we have now collected some more data (manuscript of the paper in progress), and we do know that many of these infants are victims of child neglect, or untended infants (from dysfunctional families with low educational background, alcohol and drugs misuse etc.). Regarding older children, in the 1-4 years age group, there were underlying conditions such as preterm birth, congenital malformations etc. that made these children prone to aspiration (these conditions were recorded as concomitant causes). In the oldest age group there were 2 children who had consumed drugs and alcohol, respectively, but not in the quantity that would lead to lethal intoxication.
However, we can not be completely sure and there is still a probability that in routine forensic practice in Estonia the "true" cause of death (not the "underlying" cause) is registered.

The clarifying sentence was added to the discussion section:

The relatively high rate of asphyxia deaths may have occurred due to the routine forensic practice in Estonian not recording the underlying causes of death (leading to asphyxia) in these cases, but rather the direct cause of death (asphyxia). However, for this study we used data as recorded in the forensic autopsy protocols.

-------------------------------------------------------------------------------

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The paper would benefit from a linguistic revision. E.g., “forensic diagnosis” (page 6) should probably read “cause of death” (?), “cadaver” (page 7) should read “the dead body” etc. Furthermore, there may be some confusion regarding the terminology of asphyxial deaths (page 8), since strangulation and hanging are used as if they represented the same mechanism, which is not the case. “Suffocation from pillow” should probably read “smothering” (or “obstruction of external airways”), “lethal compression” should probably read “thoracic immobilization”, “forensic autopsy” > “medico-legal autopsy”, “forensic doctor” and “forensic medical expertise” and “forensic expert” > “forensic pathologist”, “other injuries” (Tab 1) > “other external causes of death”, “intent unknown” (Tab 1) > “undetermined manner of death”, etc.

We are very grateful to the reviewer for providing us with the list of terms. We have corrected all these in the text.

“other injuries” (Tab 1) > “other external causes of death” this is now split to 2 categories (as suggested by second reviewer) and thus removed from the table

Please clarify whether the cases of undetermined cause of death (page 9) were excluded from the investigation. If COD was not established, also manner of death is not established, and consequently these cases cannot be included as unnatural deaths.

Cases of undetermined manner of death were not excluded from the study. A clarifying sentence why these deaths were considered as unnatural was added to the text:

For the remaining 22 deaths (10.4 % of all injury deaths) the manner of death was undetermined. These cases included 6 unclear traumas of the skull, 5 unclear mechanic asphyxications, 7 bodies of newborn babies were found. In 4 cases the bodies were found in advanced stages of putrefaction so that the underlying cause of death and intent were impossible to identify. The rationale for classifying these deaths as of undetermined
manner of death was that death from a disease had been excluded at the autopsy and/or the evidence from police suggested that the death was unnatural.

Please clarify what is meant by “...allows generalization to a national level...” (last page) – since this report does indeed cover the whole nation!?

*We changed the sentence to the one below:*

On the other hand, we analysed all cases of autopsied children between 0 and 14 years in Estonia in 2001-2005, which is the major strength of the study.

Please provide correct spelling of authors’ names as presented in the original publications, e.g., Nordic letters (åäö) should be used wherever appropriate (Björnstig etc)

*We have now done that.*

Discretionary Revisions (which the author can choose to ignore)

I think that a paragraph on “Preventive measures” would be appropriate, since this is the final aim of the investigation.

*This is a very relevant comment (also raised by the second reviewer). A new paragraph has now been added to the discussion.*

Please check pagination of Discussion and further.

*Have corrected page numbering.*

Please provide English translations of non-English titles in the list of references.

*We have done that now.*
Reviewer’s report
Title: Childhood deaths from external causes in Estonia, 2001-2005
Version: 1 Date: 1 May 2007
Reviewer: Marianne Nichol
Reviewer’s report:
General
Thank you for the opportunity to review this manuscript, which we read with interest. In general, we found the article to be well constructed and its content was important to our field. We would like to be encouraging to the authors, and offer some suggestions for the improvement of the article.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. Presentation of rates and estimates without confidence intervals. The data presented on injury mortality is original and important. However, we feel that it could be improved through the use of confidence intervals around many of the key estimates (e.g. the rates presented in Table 1). Your data could be viewed as a sample across time, and therefore it would be useful to present these confidence estimates around your sample estimates.

This is a relevant comment. We have now inserted confidence intervals for the mortality rates presented in Table 1 as suggested by the reviewers.

2. Use of percentage agreement in Table 2. Some of the agreement that occurred in table 2 between the "autopsy records" and the SOE data could have occurred by chance; it is therefore sensible to calculate a measure of agreement such as kappa to estimate the amount of agreement, while adjusting for chance agreement.

Kappa statistics was calculated and necessary sentences were added to both the Methods and the Results sections.

3. Presentation of results. We found the level of detail that was presented to be a bit much; and perhaps overly detailed. We would suggest that the presentation of the findings be condensed to a few key patterns and points, and the detailed descriptions of individual injury events be eliminated. Your tables are quite well constructed, and the additional prose does not help.

We realize that detailed description of causes of death may not be appreciated by editors of paper-based journals due to limited space. However, our manuscript is still well below 3,000 words and BMC Public Health does not have page limits, the details presented here may be of particular interest for the forensic readership. Given that elimination of these details was recommended by only one reviewer, we would appreciate if the details remain in the manuscript.

4. Presentation of discussion. Our opinion was that the discussion could use some additional work. We would suggest that you identify some key messages here for the
ongoing surveillance of injury deaths in Estonia, as well as for prevention, and that you limit your discussion to these key points. Your comparison of your study findings with what others have found could be used to highlight these key points; but should not be the main issues emphasized in the discussion.

This is a very relevant comment. Age-specific comparisons of injury mortality rates between the countries were deleted from the discussion. An additional paragraph now added to the discussion:

McKee and Oreskovic [20] claim that child injuries are low at the policy agenda in Europe. The reasons given were: 1) child injuries are typically an invisible condition, 2) as a policy issue they have no owner, and 3) injuries are still seen as something that just happens. In Estonia, although some success in reducing child injury fatalities has been achieved, these three issues should be approached. This would include establishing injury databases and increasing research on injuries, as injury epidemiology itself is not an active part of mainstream epidemiology [21]. It should also include actions by a wide range of people, including politicians to develop the policies on safety, and strengthening public health services. Last but not least, child and especially infant injury prevention in Estonia should include education of parents and childminders, with special attention to families with low educational background and marginalized groups.

-----------------------------------------------
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. It might be reasonable to present the validity of the SOE data at the beginning of the results section and then present the nationally representative findings.

The primary aim of the study was to describe the injury deaths based on forensic diagnoses, not SOE data. The validity study was complimentary to this description and seems more logical to present the findings in this order.

2. The specific descriptions of how children died (i.e. hung on fence post, barbed wire fence, trapped under fallen cupboard, one infant was found dead in the yard, father killed his whole family etc) are unnecessary since they do not appear to provide additional information in terms of injury trends or preventative measures that might be implemented.

While these specific descriptions do not provide additional information in terms of injury trends as pointed out by the reviewers, they may provide a broader overview
of the circumstances around death and make the statement that these deaths are avoidable, more obvious. Given that elimination of these details was recommended by only one reviewer, we would appreciate if the details remain in the manuscript since their inclusion does not lead to excessive length of the paper.

3. Table 1. Since the “other injuries” category is composed of falls and being hit by objects, it would perhaps be useful to separate this group into its component causes, especially since falls tend to be a leading cause of non-fatal injuries.

We agree with the reviewer’s remark that the falls tend to be a leading cause of non-fatal injuries, their contribution to the mortality from external causes is minor and may not require presentation as a separate group. We have now separated “other injuries” into component causes.

4. Discussion. Since the overall injury rates are compared to those in other countries, presenting hypotheses as to why the rates might differ would help highlight the policy and public health implications of this research.

New paragraph in discussion:
Since the difference between injury mortality compared to Estonia and other countries is largest in infants, some of the reasons could be given. The evidence is very difficult to establish because of lack of information, but our continuing research has shown (paper in preparation) that harmful habits such as alcohol and/or drug abuse, leading to child neglect, are rather frequent reasons leading to infant injury deaths.

5. The introduction states that the injury death rate was 28.7 per 100,000 in 2000. The findings from this research show that average annual injury mortality from 2001 to 2005 is 19.1 per 100,000. It would be worthwhile to note the improvement in mortality and hypothesize why the decline has occurred. Perhaps it may be due to a difference in how the rates were calculated, or perhaps it is reflective of preventative measures that have been implemented since 2000. The progress made may highlight the effectiveness of programs and lend support to injury prevention initiatives.

This improvement has now been noted in the discussion, and the reasons for reduction on injury rate have been hypothesized:

The reduction in childhood mortality from external causes from 28.7 per 100 000 in 2000 to the observed level indicates that some progress in reducing injury mortality in children in Estonia has been achieved over the recent years. Reasons for this kind of improvement could be attributed, along with general improvements in the country, to the National Health Programme for Children and Youth, approved by the Estonian Government in the
year 2000. Among the aims of the programme was “reduce injuries caused by external origins and traumas and increase safety of the environment”. It has been acknowledged that the health of children and youth improved as a result of understanding that “the key to improving the health of children and the entire population lies not only within the public health system and the Ministry of Social Affairs but also within many other fields and ministry administrative domains and in accompanying activities”.

6. If at all possible, please avoid the use of acronyms (short forms; e.g. SOE, EBFM, etc.; as these were not understandable to these readers.

*Agree with this. Acronyms are now replaced with full names.*

7. The correct term is "gold standard" not "golden standard" (page 7

*The term was changed as suggested.*

Discretionary Revisions (which the author can choose to ignore)
The subcategories in table 1 could be made more obvious by using more pronounced indentations.