Author's response to reviews

Title: Adverse Outcomes among Home Care Clients Associated with Emergency Room Visit or Pre-Hospitalization: A Descriptive Study of Secondary Health Databases

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Author's response to reviews: see over
Dear Editorial Board

Re: “Adverse Events among Ontario Home Care Clients Associated with Emergency Room Visit or Hospitalization: A Retrospective Cohort Study”

I would like to thank the reviewers for their very helpful and constructive feedback. We are pleased to submit our revised paper. The paper has been reviewed and corrected by an editor. The substantive revisions have addressed the following comments:

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<th>Reviewer: Khaled Al-Surimi</th>
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<td>1. Abstract conclusions: it looks like a recommendation and not a conclusion statement.</td>
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<td>2. Results: 1st paragraph requires revisions as the overall percentage is more than 100%. Table 1 (pressure ulcer stage 2+) the round up % should be .12 not 0.11. Table 1: row 13, ++ require explanation.</td>
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<td>3. Discussion: 1st paragraph, line 2, the authors reported the overall incidence rate of Adverse outcomes ranges between 12 to 13% for 2008 and 2009 while the fact is that either to say from 12.7</td>
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4. The consequences of adverse outcomes in this study found significantly associated with LTC home admission and death … it would be helpful to discuss the level of preventability of these adverse events.

We agree with this comment but are unable to discuss preventability because of limitations of the secondary data sources, specifically availability of data to determine preventability with confidence. In the discussion we explain “There was no way to determine from the secondary data available whether the events observed in this study were preventable and thus it is not possible to determine the extent to which the consequences could have been avoided.” (p. 17)

5. The title: the phrase ‘descriptive study’ could be replaced by ‘retrospective cohort’.

The change has been made to the title.

6. 2. In abstract, methods section, line 6, replace word relationship with association.

The change has been made in the abstract: “Logistic regression analysis was used to examine the association between the events and their consequences.” (p. 4)

7. The scope of the literature review .. need more expansion. For example I advise authors to have a look at the Paul Masotti and others who have done previous good work related to adverse events.

We have expanded the literature review to include a discussion of the Paul Masotti published scoping review: “In 2009 a scoping review of adverse events experienced by HC clients reported overall rates of 3.5 to 15.1% [8]. Adverse drug events, infections, wounds, and falls were the types of events identified. Policy suggestions from that review addressed the need for improved assessment, better monitoring, education strategies, and improved coordination and communication between partners in the provision of care [8].” (p. 7)

8. Study setting: Paragraph 1, line 1, I suggest to authors using words ‘estimate’ instead of ‘determine’ with incidence rates.

We have made the suggested change: “A retrospective cohort design was used to estimate the incidence and types of adverse events that were associated with an ED visit or hospitalization.” (p. 9)

9. Table 1: I prefer adding the year 2008 and 2009 as part of the table caption.

The suggested change has been made: “Table 1: Incidence rates of adverse events identified in NACRS/ DAD/ MHRS for Ontario home care clients in 2008 and 2009” (p. 27)

Reviewer: Mondher Letaief

1. In the introduction section, additional information would be of interest to show the rationale of the study, such as the relevance of documenting patient harm…

We have attempted to respond to this comment by restating the significance of the issue along with emphasis about the need for policy changes: “Home care is a care option that is increasing in practice and correspondingly in cost. The Canadian Home Care Association estimates that 1.8 million Canadians received publicly funded HC services in 2012. That is an increase of 51% since 2009 [5]. The cost of providing that care is estimated at $5.8 billion [6]. One of the reasons for this increase is the discharge from acute
care settings of patients who require continuing care. Approximately 73.4% of HC clients are reported to have been discharged from an acute care setting [7]. With the growth in homecare comes the challenge of understanding and managing the safety issues that pertain. Those issues are only beginning to be addressed in healthcare literature; however, it is imperative that they are better understood in order to effectively develop policy and practice recommendations to address them.” (p. 6)

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<th>2. In the methodology section, authors are invited to give more information on the adverse events identification process.</th>
<th>We have addressed this recommendation with the following explanation: “Case screening was conducted by two teams of researchers consisting of statisticians, clinicians, and health service researchers. They worked independently but met weekly to review case-screening criteria, to resolve operational definition issues, and to establish Statistical Analysis Software (SAS) coding criteria for each adverse event.” (p. 6)</th>
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<th>3. …Was it possible to investigate the preventability rates as well as area of attention that you may find as consequences of the event (blunt end causes or route causes).</th>
<th>We thank Dr. Letaief for the suggestion. We have added the following explanation in the discussion section: “There was no way to determine from the secondary data available whether the events observed in this study were preventable and thus it is not possible to determine the extent to which the consequences could have been avoided.”. (p.17). With regard to route cause analysis of events: we carried out a sub-study of route causes of falls and medication events as part of the larger Pan-Canadian HC Safety study. The authors of this sub-study are presently drafting a paper for publication. Thus we have not included findings of the route cause analysis in our current paper.</th>
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<th>4. The logistic regression was not well detailed to see the appropriateness of the analysis as well as the weight of confounders.</th>
<th>In the analysis section (p. 13) we have expanded to say: “Logistic regression analysis was used to determine the association between the adverse events and LTC placement or client death. Adjustment for known and measured risk factors was performed, with backwards elimination to produce a parsimonious model with significant covariates.” In the results sections we explained: “We accounted for client characteristics such as age, gender, dementia, pneumonia diagnosis, and priority for long-term-care placement using the MAPLe score” (p. 14): the influence of these confounders are presented in Tables 3 and 4.</th>
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<th>5. In the ethics section, you do not need to provide detailed information about the data access …since you already have ethical clearance.</th>
<th>We did not follow this suggestion because we believe it is important that the reader understand how the secondary databases were accessed and the process for data linkage which went beyond simply linking the encrypted health card number (although this was the primary unique identifier used). However we will remove the explanation</th>
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<td><strong>6.</strong> To facilitate understanding of the adverse outcomes, it is preferable to add some cases that illustrate the nature and the type of adverse outcomes.</td>
<td>This is an excellent suggestion but we wonder if it is best reserved for a second paper. In the Pan-Canadian HC Safety study we carried out 1) in-depth route cause analysis of falls and medication events; and 2) conducted interviews with clients, care providers, family members, and informal caregivers. A paper that summarizes the findings from the client and caregiver interviews has been submitted for publication review and our route cause analysis paper is current being drafted. We prefer to defer the inclusion of case study descriptions for these two qualitative papers.</td>
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<td><strong>7.</strong> The discussion section would be more relevant if authors added paragraph about the relevance of their study findings to specific policies and improvement programmes on a strategic level.</td>
<td>Thank you for the suggestion; we have expanded our discussion on page 19 in the following way: “Policies are needed to improve the system of care by improving the assessment and monitoring of risk, education, and by improving care coordination and communication [8]. Tools already exist in Canada that could be used to assess and manage clients at risk for falls or other adverse events. The interRAI clinical assessment protocols [28] and the Registered Nurses’ Association of Ontario (RNAO) best practice guidelines [29, 30] are two examples. Implementation of the full clinical capabilities of the RAI-HC in Canada should be a priority. Advancement of electronic documentation is another initiative that will support improvement by facilitating access to information, enabling more timely communication, and supporting the standardization of care processes. At the strategic level it will be important to work with health jurisdictions to effect changes in accreditation standards, safety monitoring, and funding policies to ensure the safety recommendations are implemented in practice.</td>
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Thank you in advance for considering our paper for publication in BMC Health Services Research. We will be pleased to make other revisions as you require.

Sincerely

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