**Reviewer's report**

**Title:** Place of death and health care utilization for people in the last 6 months of life in Switzerland: a retrospective analysis using administrative data

**Version:** 1  **Date:** 11 December 2012

**Reviewer:** Marylou Cardenas-Turanzas

**Reviewer's report:**

Monday, December 10, 2012

This article examines the patterns of health care use at the end of life and place of death of 58,732 residents of Switzerland who died between 2007 and 2011. The authors accomplished their goal by evaluating patients who died under the care of Helsana Group, the largest health insurer in the country. The topic of this article is of great interest to health care administrators, health care researchers, clinicians, and professionals in public health. This interest arises from the worldwide trend of the ageing of the population that affects developed and undeveloped countries. However the authors of this manuscript failed to present detailed and informative data to inform on this topic as well as to be consistent along their objectives and their conclusions.

Several details have to be considered in order to achieve consistency between the initial objectives and the conclusions.

**Major Compulsory Revisions:**

1. Set inclusion and exclusion criteria to make the sample uniform. If the authors conceive the place of death is responding to patients preferences, unexpected deaths had to be excluded from the sample i.e. deaths due to accidents and trauma. In theory, these deaths were not responding to an explicit preference of the patient. In the same line, the sample had to include only adults due to issue of capacity to make autonomous health decisions related to end-of-life preferences.

2. Include more clinical information on the deceased’s' end-of-life i.e. underlying cause of death. It is well known that in cancer, patients dying of acute myeloid leukemia tend to receive medical care of curative intent toward the end and usually die in hospitals, while patients diagnosed with chronic myeloid leukemia live longer and likely die of other causes not related to the leukemia itself. Broad categories of causes of death could inform health planners on the types of patients who would die at home, nursing home or hospitals.

3. When comparing the three sites of death, if you are interested in characterizing patients dying at home or in nursing homes, then use hospital deaths as the reference category.

4. Regardless of claims data. These data usually is a list of charges from the provider to the insurer and not a list of the costs of the services rendered. Costs
and charges are well defined in the health care services literature. If you converted charges to costs, you need to declare this in the Methods Section including information on the formula or ratio used for the adjustment.

5. In relation to the economic conceptual frame, please declare the perspective of the analysis (i.e. insurer, provider, government, societal). In addition, if your interest is on home as a preferred place of death and wish to influence policies to facilitate this preference, then patient costs need to be considered. These costs are also known as time costs or indirect costs of care. If it is not possible to measure these, as most researchers would recognize, at least acknowledge the limitation and the consequences of not knowing the magnitude of these costs in relation to the place of death.

Minor Essential Revisions:

1. be consistent with the use of acronyms and abbreviations along the manuscript, i.e. ACT in the Methods Section, page 5, line 12 is not spelled. In the Methods Section, page 5, in the definition of the covariate DED: the acronym CHF was not defined anywhere in the previous text.

2. be consistent with the names of the variables of study, i.e. Methods Section, page 5, first paragraph, in PCG’s. The description of the coding of this dummy variable is not consistent with the text explaining this variable in the formula (I agree that the meaning is equal but to facilitate reading please use same wording along the manuscript).

3. Results, page 7, under subheading of Population Characteristics, second paragraph starting with words “The difference in age is...”: seems to me you are trying to say that the association of age with the place of death disappears when adjusted for gender, if this is true please reword the sentence.

4. Results, page 7, last paragraph at the end of subheading of Population Characteristics: the use of the Cramer’s V is not mentioned in the Methods Section, please explain in which step of the analysis was used.

5. Results, page 7, last paragraph in sentence starting “A total of 60.8%...last six months of life.” The next two sentences are contradictory, please reorganize or reword to make them clear. Maybe you just need to explain which group is the denominator of each of the proportions reported.

6. Discussion Section. Page 8. The section needs to start describing the main findings without consideration of who was first in reporting what. The sentence about the appropriateness of care rendered to these patients at the end of their life (first paragraph of Discussion Section) is irrelevant because the main objective of this study was to find independent predictors of the place of death and not predictors of quality of care at the end of life. I would start the Discussion Section with the words of the second paragraph: “We found death occurred...”

7. Conclusions. Page 11. The main message of the section is about the need to increase the availability of community end-of-life care and non-acute care inpatient facilities in Switzerland. However, this article was about evaluation of patterns of health care use at the end of life and determinants of the place of death and not about trends of utilization along the years of the study. A link is
missing between the conclusions and the information presented in the article. Maybe adding how knowing determinants of place of death and patterns of health care utilization can help decision makers on the allocation of these needed services would make the conclusions strong.

8. Tables 1, 2, and 3. The titles have to sustain by themselves, please add more information to them in order to understand where this sample comes from, i.e. which country represents, the period of study or maybe the step of the analysis presented. Also at the bottom of each table spell out all abbreviations used i.e. CHF

9. Table 3. Row of “different medication mean”. The term was described in the Methods Section as WHO Anatomical Therapeutic Chemical (ATC) then please be consistent with the use of terms.

10. Table 4. In this table I would prefer to see the complete analysis output with the betas, standard errors, Wald statistics, odds ratios with 95% confidence intervals, and the actual p-values. To make easier the interpretation of the analysis to the reader, for dichotomous variables, include the name of value that equals 1 i.e. in the row of sex write female; in the row of PRIV write additional private hospital insurance, etc.

11. Figure 1. The figure title has also to sustain by itself, maybe add data on the period of the study and on the health care insurance company represented. The color coding for the cantons was not included in the file.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests