BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([http://bmjopen.bmj.com/site/about/resources/checklist.pdf](http://bmjopen.bmj.com/site/about/resources/checklist.pdf)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

**ARTICLE DETAILS**

<table>
<thead>
<tr>
<th>TITLE (PROVISIONAL)</th>
<th>Disability and morbidity among older patients in the Emergency Department – A Danish population based cohort study</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTHORS</td>
<td>Tanderup, Anette; Lassen, Annmarie; Rosholm, Jens; Ryg, Jesper</td>
</tr>
</tbody>
</table>

**VERSION 1 – REVIEW**

| REVIEWER             | Simon Conroy  
|                      | University of Leicester, UK |
| REVIEW RETURNED      | 11-May-2018                |
| GENERAL COMMENTS     | Nice study, design outputs, reported in balanced manner, and some of the findings are helpful. I don't agree with their rejection of frailty as this could well have been a better measure of need. For example the Clinical Frailty Scale provides a range of frailty that could have better illustrated the magnitude of the issue at different levels of severity - and in contrast to their discussion, it is quick simple and easy to use, and has been validated in a number of acute studies. The items they have selected for capturing geriatric issues probably have a floor effect, hence they identify 50% of people 65+ who might benefit from geriatric care principles. two comorbidities and five medications is hardly geriatrics these days, rather it is the usual patient! The structure and logic of the writing is good, but there are some nuances that would suggest a native English edit would be helpful.  
|                      | Overall I think it is a generally helpful paper, methodologically robust, but would benefit from some review of what they mean by geriatric need, as I think the threshold is too low in the present iteration. Its should be possible to fit a Frailty Index to the data they have available and test if it is a better predictor. |

| REVIEWER             | Christophe J Bula  
|                      | Service of geriatric médecine and rehabilitation, University of Lausanne medical center, Switzerland |
| REVIEW RETURNED      | 24-May-2018                |
| GENERAL COMMENTS     | Overall appreciation:  
|                      | Results of this study that suggest a dose-response relationship between the number of “geriatric target areas” and several adverse outcomes are certainly very nice. Yet the reader remains undecided about their real implications as, except for polypharmacy, none of these target areas are really “actionable” for focused interventions. Indeed, even polypharmacy as defined in this study (5 medications or more) could be considered more as an indicator of risk rather than a true risk factor that has a causal
relationship with these adverse outcomes. In addition, some outcomes such as the use of residential care merge the use of services as different as nursing homes and rehabilitation (cf. P6, §2, last line), making it difficult to really assess the implications of these results both at individual and population level. I don’t think either that results further add to the already large body of literature showing the need for ED to enhance education about older patients and improve the related processes of care. Overall, I think the study would be better suited for publication in journals specialized in emergency care.

General comments:
This prospective cohort study investigated the prevalence of several geriatric conditions (defined as “geriatric target areas” such as functional impairment requiring home or residential care within the last 30-day period, recently increased impairment, polypharmacy, and comorbidity) and their association with several indicators of health care utilization (hospital admission, length of stay, 30-day ED re-attendance, 1-year loss of independence), as well as with in-hospital and 30-day post-discharge mortality in medical patients aged 65 years or more who consulted the Emergency Department (ED) of a University Hospital in Denmark.

Results show a relatively high prevalence of these geriatric conditions and their dose-dependent association with most of the defined outcomes.

Although the manuscript will need some English editing, the methodology is clearly described and the analytic strategy is appropriate. Results are clearly presented.

A clear strength of the study is to use a population-based sample with access to administrative data from an impressive network of nation-wide database. Yet, as acknowledged by the authors, the paucity of clinical data is a clear and strong limitation of the study in terms of clinical implications. In addition, the reader remains unconvinced about the rationale (paucity of data and need to enhance awareness about older patients in ED) presented in the introduction section to justify the study. Further, there is some stretch from showing the association between geriatric conditions and concluding that there is a need for increased awareness in the ED. Indeed, it remains unclear from the description of the Odense University Hospital ED (Methods section, P6, §1) whether there is actually already some geriatric input or not.

Specific comments:
Title
See comment above; consider modifying the title to better suit the study’s results as their link with the need for increased awareness in geriatric care does not seem straightforward.

Abstract:
1) P2, L1, Objectives: the terminology “geriatric target area” is unfamiliar and unclear for the reader at this point; consider using alternative terms such as “geriatric syndromes” or “geriatric conditions”.


Introduction:
1) P5, §2, L1: The whole sentence seems awkward and will need to be rephrased to replace “… but the definition is not defined…”.
2) P5, §2, L5-6: The sentence seems awkward, consider moving “of common disease” after “…with non-specific complaints…”.
3) P5, §2, L5 and 7: NSC is an unusual abbreviation, and it is used only further in the discussion section (P18) of the paper in a brief §; consider using full spelling “non-specific complaints” throughout the text.
4) P5, §3, L3: Typo, please modify “neither too well” (instead of “to well”).
5) P5, §3, L6-7: The authors are true that there is some uncertainty about how best to apply the concept of comprehensive geriatric assessment within the ED setting. However, there is a large amount of literature about the prevalence of geriatric conditions among older patients consulting the ED (see for instance a review by Samaras N et al. Ann Emerg Med. 2010;56:261-269; or the international study by Gray L et al. Ann Emerg Med. 2013;62:467-474). This statement should be modified.

Methods:
6) P6, §1, L7: Please consider modifying “cardiogenic” to “cardiac” or “cardio-vascular disease” and “nephrogenic” to “nephrological treatment”.
7) P6§1, fore last line: Add a comma after ED in “From the ED, patients….”
8) P6, §2, L1: Add a comma after system in “In the Danish healthcare system, primary…..”
9) P6, §2, L4: Consider rewording “special educated” to “specialized nurse”.
10) P8, §2, L2: There is something missing at the end of the sentence that defines “recently increased impairment”. Is it compared to the “previous 30-day period”? Please clarify.
11) P8, §7, L3: Modify to “divided” instead of “dived”.
12) P8, §7, last two lines: Could the authors provide some more information on their rationale to consider delirium as a non-specific complaint. Although delirium most frequently results from several precipitating causes, in older persons it usually clearly points to an underlying neurodegenerative disease, and therefore could have been considered as a specific complaint.
13) P8, §8, L1: Add a “d” to “discharge” in “…(discharged from the ED….”.
14) P9, §1: It seems that under residential care both nursing home and rehabilitation are considered. These health care settings usually provide very different type of interventions. Could the authors comment on that. What can be the consequence when interpreting their results? This could also be mentioned in the discussion of the study’s limitations (Discussion section).
15) P9, §1, L3: modify “presiding to “preceding” in “… day in the preceding period) ….”
16) P9, §3, L2: Could the authors comment on a) the rationale to analyze hospital length of stay as a dichotomous outcome; b) their choice of the 48 hours cut-off: this is unusual and should be justified in the methods section and, possibly, discussed in the study limitation too.
17) P9, §4 and 5: Could the authors provide more details on the selection of the variable included in their multivariable models. In particular, according to the methods section and the footnote in
Table 3, “marital status” was apparently not included in the multivariable model predicting acute hospital re-attendance at 30 days. As defined, marital status is a proxy to the participants’ living situation in this study, an important determinant of both residential care use and of hospital re-admission, and it would be necessary to adjust for its potential confounding effect.

Results:
18) P13, §3, L1: as written, the two sentence seem redundant. Please clarify.
19) P15, §1, L1: Add a comma after analysis in “In the multivariate analysis, increasing number…”
20) P15, §1, L2: As the adjusted hazard ratio is 3.85, please modify “up to” to “almost 4 times…”
21) P15, §1, L4-6: This sentence needs some editing: add a comma after “…new acute hospital re-attendance, increasing number…” , modify to something like: “Compared to patients without any geriatric target area, the risk of 30-day readmission increased progressively to 1.5, 1.9, and 2.4 times in patients with two, three, and four target areas, respectively.”
22) P15, §3: This paragraph is somewhat confusing as the reader does not easily understand that these figures report to the overall mortality during the entire follow-up period. This should be clarified.

Discussion:
23) P17, §1-3: The authors are right to mention that their analyses show that the amount of defined target areas is closely related to prognosis. However, they should also acknowledge that in all the analyses, there is substantial overlap in the 95% confidence intervals that preclude to really distinguish the risk in individuals across the different level of target areas identified. This makes it very difficult to determine the real usefulness of the study’s findings. Moreover, because the definition of some of these target areas (e.g., impairment) is rather crude, the reader remains skeptical about the contribution of these results to decide how best to improve geriatric care in the ED.
24) P17, §3, L3: Modify “easy” to “…easily accessible data…”
25) P18, §1: This entire paragraph about non-specific complaint does not appear to bring much to the topic and could be easily omitted, provided space is needed.

Tables and supplementary tables
19) Table 1: The table could be lightened by providing the values of only one of the two possible categories (i.e., female, living alone, urgent category).
20) Table 1, Body temperature: suppress the second decimal for the category 4 geriatric target areas (36.6 instead of 36.65)
21) Table 2. In the footnote, modify “…(continues …)” to “…(continuous variable)…”

Figures
22) Figure 2 (P26): There is a legend under figure 2 (P26) that does not correspond to its content (? “Stratification by age-categories…” ?) and is different form the legend provided P24. Please correct.
Reviewer: 1

Nice study, design outputs, reported in balanced manner, and some of the findings are helpful. I don’t agree with their rejection of frailty as this could well have been a better measure of need. For example the Clinical Frailty Scale provides a range of frailty that could have better illustrated the magnitude of the issue at different levels of severity - and in contrast to their discussion, it is quick simple and easy to use, and has been validated in a number of acute studies.

The items they have selected for capturing geriatric issues probably have a floor effect, hence then identify 50% of people 65+ who might benefit from geriatric care principles. two comorbidities and five medications is hardly geriatrics these days, rather it is the usual patient!

The structure and logic of the writing is good, but there are some nuances that would suggest a native English edit would be helpful.

Overall I think it is a generally helpful paper, methodologically robust, but would benefit from some review of what they mean by geriatric need, as I think the threshold is too low in the present iteration. Its should be possible to fit a Frailty Index to the data they have available and test if it is a better predictor.

Authors reply

Thank you for your positive position regarding our study. We agree that frailty identification is a very good tool to identify patients at risk of poor health outcome. Had our data been in a form where we retrospectively could have applied a frailty score (e.g. Clinical Frailty index or Identification of Seniors at Risk) it would probably have generated a better measure of geriatric need. Unfortunately, our data are not in a form allowing application of a validated ED-frailty scale. In the introduction and the discussion sections we have put more emphasis on frailty as an indicator of increased risk and the need for geriatric intervention.

The purpose of our study was not to produce a “score” or a “threshold” for need of geriatric assessment, but to draw attention to the amount of geriatric target areas among older patients in the ED. We acknowledge that we had not been clear enough about this. We can see why the readers might conclude that 50 % of older patients should receive geriatric assessment. We have now changed the title to ‘Disability and morbidity among older patients in the Emergency Department – A Danish population based cohort study’, and rewritten the introduction, discussion, and conclusion including clarifying and emphasizing that we did not strive to generate a new instrument to identify older patients in need of geriatric assessment.

Reviewer: 2

Overall appreciation:

Results of this study that suggest a dose-response relationship between the number of “geriatric target areas” and several adverse outcomes are certainly very nice. Yet the reader remains undecided about their real implications as, except for polypharmacy, none of these target areas are really “actionable” for focused interventions. Indeed, even polypharmacy as defined in this study (5 medications or more) could be considered more as an indicator of risk rather than a true risk factor that has a causal relationship with these adverse outcomes. In addition, some outcomes such as the use of residential care merge the use of services as different as nursing homes and rehabilitation (cf P6, §2, last line), making it difficult to really assess the implications of these results both at individual
and population level. I don’t think either that results further add to the already large body of literature showing the need for ED to enhance education about older patients and improve the related processes of care. Overall, I think the study would be better suited for publication in journals specialized in emergency care.

**General comments:**

This prospective cohort study investigated the prevalence of several geriatric conditions (defined as “geriatric target areas” such as functional impairment requiring home or residential care within the last 30-day period, recently increased impairment, polypharmacy, and comorbidity) and their association with several indicators of health care utilization (hospital admission, length of stay, 30-day ED re-attendance, 1-year loss of independence), as well as with in-hospital and 30-day post-discharge mortality in medical patients aged 65 years or more who consulted the Emergency Department (ED) of a University Hospital in Denmark.

Results show a relatively high prevalence of these geriatric conditions and their dose-dependent association with most of the defined outcomes. Although the manuscript will need some English editing, the methodology is clearly described and the analytic strategy is appropriate. Results are clearly presented. A clear strength of the study is to use a population-based sample with access to administrative data from an impressive network of nation-wide database.

Yet, as acknowledged by the authors, the paucity of clinical data is a clear and strong limitation of the study in terms of clinical implications. In addition, the reader remains unconvinced about the rationale (paucity of data and need to enhance awareness about older patients in ED) presented in the introduction section to justify the study. Further, there is some stretch from showing the association between geriatric conditions and concluding that there is a need for increased awareness in the ED.

Indeed, it remains unclear from the description of the Odense University Hospital ED (Methods section, P6, §1) whether there is actually already some geriatric input or not.

**Authors reply**

Thank you for the many fruitful remarks and suggestions allowing us to strength our paper. We agree that data and results are not appropriate for clinical implication on an individual level. We acknowledge that we have not been clear enough about the purpose and rational for our study. The purpose was not to produce a new instrument to identify older patients in need of geriatric assessment, but to investigate the occurrence of geriatric/frailty areas that are frequently used to identify geriatric/frail patients.

Furthermore, we were slightly overreaching in the conclusion of our findings and we completely agree that our data do not show that increased geriatric awareness in the ED would improve the outcome of patients with a poor prognosis. The title, introduction, discussion, and conclusion have been rewritten to clarify this.

All specialties are represented at Odense University Hospital including a large department of geriatric medicine. This information has been added to the description in the method section:

P5, §2; L2 “Odense University Hospital in Denmark is a 1,000-bed university teaching hospital with all specialties represented including geriatric medicine.”

**Reviewer specific comments:**

**Title**

See comment above; consider modifying the title to better suit the study’s results as their link with the need for increased awareness in geriatric care does not seem straightforward.
The title has been modified to:

“Disability and morbidity among older patients in the Emergency Department – A Danish population based cohort study”

Reviewer specific comments:

Abstract:

1) P2, L1, Objectives: the terminology “geriatric target area” is unfamiliar and unclear for the reader at this point; consider using alternative terms such as “geriatric syndromes” or “geriatric conditions”.

Authors reply: The terminology “geriatric target areas” in the abstract has been changed to “geriatric conditions”

Introduction:

1) P5, §2, L1: The whole sentence seems awkward and will need to be rephrased to replace “… but the definition is not defined…”.

Authors reply: The sentence has been rephrased: P4, §3, L1 “Geriatric patients are usually 65 years or older but are not solely defined by age.”

2) P5, §2, L5-6: The sentence seems awkward, consider moving “of common disease” after “…with non-specific complaints…”

Authors reply: The sentence has been rephrased: P4, §3, L6 “Geriatric patients often present with non-specific complaints like general weakness, immobilisation, confusion, or fall”

3) P5, §2, L5 and 7: NSC is an unusual abbreviation, and it is used only further in the discussion section (P18) of the paper in a brief §; consider using full spelling “non-specific complaints” throughout the text.

Authors reply: The abbreviation NSC is no longer used in the text

4) P5, §3, L3: Typo, please modify “neither too well” (instead of “to well”).

Authors reply: The typo has been corrected: P4, §2, L3 “neither too well”

5) P5, §3, L6-7: The authors are true that there is some uncertainty about how best to apply the concept of comprehensive geriatric assessment within the ED setting. However, there is a large amount of literature about the prevalence of geriatric conditions among older patients consulting the ED (see for instance a review by Samaras N et al. Ann Emerg Med. 2010;56:261-269; or the international study by Gray L et al. Ann Emerg Med. 2013;62:467-474). This statement should be modified.

Authors reply: The statement has been modified and the prevalence of polypharmacy, functional- and cognitive impairment has been added: P4, §3, L4 “About 25 % of older patients in the ED have cognitive impairment as a result of delirium, dementia, or both (ref 13), polypharmacy is present in 37 %, and 39 % have functional decline before the ED contact.(ref 14)”

Methods:
6) P6, §1, L7: Please consider modifying “cardiogenic” to “cardiac” or “cardio-vascular disease” and “nephrogenic” to “nephrological treatment”.

Authors reply: The sentence has been modified P5, §2, L7 “…cardio-vascular disease, ongoing nephrological or oncological treatment.”

7) P6§1, fore last line: Add a comma after ED in “From the ED, patients….”

Authors reply: A comma has been added

8) P6, §2, L1: Add a comma after system in “In the Danish healthcare system, primary….“

Authors reply: A comma has been added

9) P6, §2, L4: Consider rewording “special educated” to “specialized nurse”.

Authors reply: “Special educated” nurse has been changed to “specialized nurse” P5, §3, L4

10) P8, §2, L2: There is something missing at the end of the sentence that defines “recently increased impairment”. Is it compared to the “previous 30-day period”? Please clarify.

Authors reply: It is compared to the previous 30 days. The word “previous” has been added to the sentence.

11) P8, §7, L3: Modify to “divided” instead of “dived”.

Authors reply: “Dived” has been change to “divided”

12) P8, §7, last two lines: Could the authors provide some more information on their rationale to consider delirium as a non-specific complaint. Although delirium most frequently results from several precipitating causes, in older persons it usually clearly points to an underlying neurodegenerative disease, and therefore could have been considered as a specific complaint.

Authors reply: It is correct that delirium usually points to an underlying neurodegenerative disease and could be considered a specific complaint. We used the definition by Nemec et al (ref17) and also sought the literature for studies on non-specific complaints. In most of these studies delirium is considered a non-specific complaint, presumably because it is the trigger-cause that presents “non-specific” (infection, medication, obstipation etc.).

13) P8, §8, L1: Add a “d” to “discharge” in “…(discharged from the ED…“.

Authors reply: A “d” has been added

14) P9, §1: It seems that under residential care both nursing home and rehabilitation are considered. These health care settings usually provide very different type of interventions. Could the authors comment on that. What can be the consequence when interpreting their results? This could also be mentioned in the discussion of the study’s limitations (Discussion section).

Authors reply: We are sorry for the confusion caused by our unclear use of the words nursing home and rehabilitation home. Treatment and care delivered in a rehabilitation home is very different from that delivered in a nursing home. We used the wrong words in the paper. In our study, a “rehabilitation home” is a short stay in a nursing home where the care and treatment delivered is the same as in a permeant nursing home. We have changed the wording to permeant and temporary nursing home: P5, §3, L7 “The municipality also administers residential care like permeant and temporary nursing homes.”

15) P9, §1, L3: modify “presiding to “preceding” in “… day in the preceding period) …“.
Authors reply: “Presiding” has been changed to “preceding”

16) P9, §3, L2: Could the authors comment on a) the rationale to analyze hospital length of stay as a dichotomous outcome; b) their choice of the 48 hours cut-off: this is unusual and should be justified in the methods section and, possibly, discussed in the study limitation too.

Authors reply: The dichotomisation of admission length into ≤ 48 hours and > 48 hours of admission was done due to the organisation of admissions in the ED of Odense University Hospital.

We have added this justification and explanation in the paper’ method section: P8,§3, L5 “The dichotomisation of admission length into ≤ 48 hours and > 48 hours of admission was chosen due to the organisation of admissions in the ED of Odense University Hospital. When patients are expected to have a short admission (≤ 48 hours) they are admitted to a short time observation unit placed in relation to the ED. Patients with expected > 48 hours of admission are admitted to an in-hospital ward. If patients with expected short admission are in need of a longer admission, they are transferred to an in-hospital ward. This division into short-and long stay units is also seen in other hospitals. (ref 36)"

17) P9, §4 and 5: Could the authors provide more details on the selection of the variable included in their multivariable models. In particular, according to the methods section and the footnote in table 3, “marital status” was apparently not included in the multivariable model predicting acute hospital re-attendance at 30 days. As defined, marital status is a proxy to the participants’ living situation in this study, an important determinant of both residential care use and of hospital re-admission, and it would be necessary to adjust for its potential confounding effect.

Authors reply: We acknowledge that marital status is an important determinant of both the outcome (hospital admission, length of stay, 30 days hospital re-attendance) and the exposure (residential care and use of home care). We have therefore added adjustment for marital status in the multivariable analyses and described this in the method section:

P9, §1, L1 “In the regression analysis, we defined numbers of identified geriatric target areas as the independent variable adjusted for predefined variables (age (continuous variable), gender, marital status, and triage urgency level (categorical variables)).”

P9, §2, L4 “In the competing risk analysis, we defined numbers of identified geriatric target area as the independent variable adjusted for predefined variables (age (continuous variable), gender, marital status, and triage urgency level (categorical variables)).”

The figures do not change significantly after the inclusion of marital status in the calculations.

Results:

18) P13, §3, L1: as written, the two sentence seem redundant. Please clarify.

Authors reply: The two sentences have been removed. It is stated under “limitations and strengths” section that the proportion of missing data were very low and follow-up was complete.

19) P15, §1, L1: Add a comma after analysis in “In the multivariate analysis, increasing number…”

Authors reply: A comma has been added

20) P15, §1, L2: As the adjusted hazard ratio is 3.85, please modify “up to” to “almost 4 times…”

Authors reply: The sentence has been changed: P14, §1, L2: “...mortality almost 4 times for patients..”
21) P15, §1, L4-6: This sentence needs some editing: add a comma after “…new acute hospital re-attendance, increasing number …”, modify to something like: “Compared to patients without any geriatric target area, the risk of 30-day readmission increased progressively to 1.5, 1.9, and 2.4 times in patients with two, three, and four target areas, respectively.”

Authors reply: We have rewritten the sentence to the suggested writing: P14, §1, L3 “Compared to patients with no target areas, the risk of 30 days hospital re-attendance increased progressively 1.5, 1.9, and 2.4 in patients with two, three, and four target areas, respectively”

22) P15, §3: This paragraph is somewhat confusing as the reader does not easily understand that these figures report to the overall mortality during the entire follow-up period. This should be clarified.

Authors reply: The text, the legend of figure 2, and the text in figure 2, have been changed to clarify that it is the overall mortality in the follow period.

Legend figure 2: P23, §2, L1: “The proportion of patients discharged alive who died, were dependent on home care, or were independent of home care in relation to number of geriatric target areas (disability, recently increased disability, polypharmacy, and comorbidity) in the A) 30 days period after discharge B) 360 days period after discharge”

Discussion:

23) P17, §1-3: The authors are right to mention that their analyses show that the amount of defined target areas is closely related to prognosis. However, they should also acknowledge that in all the analyses, there is substantial overlap in the 95% confidence intervals that preclude to really distinguish the risk in individuals across the different level of target areas identified. This makes it very difficult to determine the real usefulness of the study’s findings. Moreover, because the definition of some of these target areas (e.g., impairment) is rather crude, the reader remains skeptical about the contribution of these results to decide how best to improve geriatric care in the ED.

Authors reply: We are thankful for this remark since we had failed to clearly formulate the aim of the study and also not commenting on the overlap of confidence intervals. The aim of the study was not to produce another score to identify individual patients at risk of poor health outcome but to describe the prevalence of geriatric target areas thereby quantifying the extent of geriatric/frail older ED patients. We have now rephrased this and acknowledged the overlap of confidence intervals:

P15 §3, L1 “The aim of this study was not to develop a new tool in order to identify frail older patients in the ED or to show when older ED patients should receive specialist assessment like CGA. The aim was to assess and describe the potential size of the problem. Our results showed a substantial overlap between the 95% confidence interval between the numbers of frailty factors, which also indicate that it would not be possible to use the number of geriatric target areas to identify the individual patient at risk of poor health outcome”

24) P17, §3, L3: Modify “easy” to “… easily accessible data…”

Authors reply: The sentence has been modified: P16, §1, L5: “We used easily accessible data already available at ED contact to identify the described geriatric target areas”

25) P18, §1: This entire paragraph about non-specific complaint does not appear to bring much to the topic and could be easily omitted, provided space is needed.
**Authors reply:** The findings regarding NSC are exciting as we would have expected a difference among the patient groups with few / many geriatric target areas. It is a recognized research area and we have chosen to keep it as we think it contributes extra input in this field.

**Tables and supplementary tables**

19) Table 1: The table could be lightened by providing the values of only one of the two possible categories (i.e., female, living alone, urgent category).

**Authors reply:** We thank you for this suggestion. The table was quite heavy and has now been changed as suggested.

20) Table 1, Body temperature: suppress the second decimal for the category 4 geriatric target areas (36.6 instead of 36.65)

**Authors reply:** The decimal has been suppressed.

21) Table 2. In the footnote, modify “…(continues …)” to “…(continuous variable)…”

**Authors reply:** The footnote has been modified.

**Figures**

22) Figure 2 (P26): There is a legend under figure 2 (P26) that does not correspond to its content (? "Stratification by age-categories…” ?) and is different form the legend provided P24. Please correct.

**Authors reply:** Figure 2 and the legend has been corrected.

**FORMATTING AMENDMENTS (if any)**

Required amendments will be listed here; please include these changes in your revised version:
- Please re-upload your supplementary files in PDF format.

**Authors reply:** Supplementary files have been uploaded in PDF format.

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**VERSION 2 – REVIEW**

<table>
<thead>
<tr>
<th>REVIEWER</th>
<th>Christophe J Büla</th>
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<tbody>
<tr>
<td></td>
<td>Service of Geriatric Medicine and Geriatric Rehabilitation, University of Lausanne Medical Center, Switzerland</td>
</tr>
<tr>
<td>REVIEW RETURNED</td>
<td>26-Jul-2018</td>
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<table>
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<tr>
<th>GENERAL COMMENTS</th>
<th>Overall appreciation:</th>
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<tr>
<td></td>
<td>Unfortunately, I did not have a cover letter explaining the authors’ decision to undertake the proposed changes or not. Several questions remains (e.g., query #14 from previous review about inclusion of rehabilitation and residential care into a same category) and I did not find mention of this issue in the discussion of the study’s limitations. Yet, the authors addressed adequately most of the other queries, including the revised analyses with marital status included in the multivariate models. There are still</td>
</tr>
</tbody>
</table>
several editing issues (see specific comment) but the main requested changes were made. The manuscript is now acceptable, provided the minor revisions are made.

Specific comments:

Title
The new title appears to better fit the paper content.

Abstract:
No comment

Introduction:
1) P5, L33: please modify "diagnosis" instead of "diagnose"
2) P5, L34-35: awkward sentence, please modify to something like “…at increased risk of poor health outcome when consulting the ED.”
3) P6, L25 and 28: the term “geriatric target areas” has been changed advantageously in the abstract to “geriatric conditions” but not here and later on in the text (e.g., P8, L34), as well as in the figures, tables and their respective legends. Please modify to make the terminology used uniform.

Methods:
4) P7, L22: modify “permeant” to “permanent”
5) P8, L28-30: modify to “If a patient had more than one acute medical ED contacts…”

Results:
6) P12, L24: modify to “geriatric conditions” (also in the entire Results section)
7) P15, L23: consider modifying to something like: “Compared to patients without any geriatric condition, those with four conditions had an odds ratio…”

Discussion:
8) The queries have been adequately addressed.

Tables, supplementary tables, and figures
9) The queries have been adequately addressed.

10) Reference #11 seems awkward, please verify

VERSION 2 – AUTHOR RESPONSE

Overall appreciation:

Unfortunately, I did not have a cover letter explaining the authors’ decision to undertake the proposed changes or not. Several questions remains (e.g., query #14 from previous review about inclusion of rehabilitation and residential care into a same category) and I did not find mention of this issue in the discussion of the study's limitations. Yet, the authors addressed adequately most of the other queries, including the revised analyses with marital status included in the multivariate models. There are still several editing issues (see specific comment) but the main requested changes were made. The manuscript is now acceptable, provided the minor revisions are made.
Authors reply

We are sorry for the confusion caused by our initial unclear use of the words “nursing home” and “rehabilitation home”. Treatment and care delivered in a rehabilitation home is very different from that delivered in a nursing home. As mentioned in the review letter we used the wrong descriptions in our first submission. In our study, a “rehabilitation home” is a short stay in a nursing home where the care and treatment delivered is the same as in a permanent nursing home. We therefore changed the wording to permanent and temporary nursing home: P5, section: method, Study design and Setting, Line 21-22

“The municipality also administers residential care like permanent and temporary nursing homes”

Specific comments:

Introduction:

1) P5, L33: please modify "diagnosis" instead of "diagnose"

Authors reply

The word has been modified

2) P5, L34-35: awkward sentence, please modify to something like “…at increased risk of poor health outcome when consulting the ED.”

Authors reply

The sentence has been rephrased to "…and at increased risk of poor health outcomes when consulting the ED"

3) P6, L25 and 28: the term “geriatric target areas” has been changed advantageously in the abstract to “geriatric conditions” but not here and later on in the text (e.g., P8, L34), as well as in the figures, tables and their respective legends. Please modify to make the terminology used uniform.

Authors reply

Thank you for noticing this. We have now changed the term "geriatric target areas" to "geriatric conditions" throughout the paper

Methods:
4) P7, L22: modify “permeant” to “permanent”

Authors reply
The word has been modified

5) P8, L28-30: modify to “If a patient had more than one acute medical ED contacts…”

Authors reply
The sentence has been rephrased to "If a patient had more than one acute medical ED contact in the study period…”