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Title	Multimorbidity, dementia and health care in older people: a population-based cohort study
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General comments (author response in bold)	<p>This is a well done, sophisticated study of an important but complex topic.</p> <p>Introduction Page 6, paragraph 2, line 25-28: The statement about the number of participants and inclusion criteria is redundant, as it is included in both the abstract and methods. I would rather see additional background or expansion on objectives. <b>We have modified this statement in response to Referee 1. See earlier response.</b></p> <p>Methods Page 9, paragraph 2, line 12: I'm wondering about the appropriateness of a Poisson distribution for utilization outcomes which are unlikely to be independent (ie a person with one hospitalization is more likely to have another hospitalization). That being said, I'm not sure I can think of a better option off hand. As mentioned in our response to Reviewer 1 above, we spent considerable time to select the chosen analytical approach. We agree with Reviewer 2 that it is important to consider the implications of interdependent utilization outcomes. We did in fact address this in our original submission using a random intercept term -- but we agree that this could have been clearer. To clarify we have added the following to page 8 in resubmission: <b>"In order to examine the associations between dementia, increasing morbidity burden and age with the clinical outcomes, we used a number of models: Cox regression for mortality and long-term care placements; and generalized linear regression using the Poisson distribution with a log-link for the rates of physician claims, ED visits, and hospitalizations (all separately) and a random intercept term for participant ... All covariates were allowed to vary on a year-by-year basis."</b></p> <p>Results In the Methods, it states that participants are followed until March 2013, death or migration out of the province. The proportion dying is reported. To understand censoring, it would be helpful to report how many people were censored due to migration. <b>We agree. We have added the following to page 9: "There were 610,457 participants aged 65 years or greater; median follow-up was 6-8 years (range 1 day to 10-9 years; 2% of participant out-migrated before the end of follow-up)."</b></p> <p>Given Table 1 is quite extensive and the effects of multimorbidity may vary not only by number of comorbidities but also by specific comorbidities, it might be useful to highlight, within the text, any notable patterns among the individual comorbidities presented in Table 1. For example, stroke or TIA is more prevalent in those with dementia in each age group and may be associated with more health care utilization than other comorbidities. This might be an issue to consider within the interpretation and consideration of residual confounding as well. Might some of the added risk of dementia be driven by specific common comorbidities in dementia? <b>We agree that this is a potential consideration. One of our early hypotheses was that certain comorbidities were more important than others. However, this has not been borne out: participants with dementia have more of every comorbidity than participants without dementia. In addition, adverse outcomes such as mortality rise in parallel with morbidity count even when "important" morbidities such as myocardial infarction, hypertension, diabetes, and heart failure are excluded. We have added a statement to the paper in resubmission (page 10) indicating that "Mortality increased with increasing number of morbidities in participants with and without dementia even after exclusion of morbidities such as myocardial infarction, hypertension, diabetes, and heart failure (data not shown)."</b></p> <p>Page 11, paragraph 3, line 37: Given larger confidence intervals, conclusions regarding discharge to a long-term care facility should be tempered. While there is a trend toward decreased discharge to a facility with increasing morbidity in people with dementia, especially age 75+, the confidence intervals seem to overlap. I do wonder if the results might look different if data on long-term care facility placement not linked to a hospital discharge had been available. <b>We have added p-values to demonstrate that the reported trends are statistically significant despite the overlapping confidence intervals, but have also tempered these statements as requested.</b></p> <p>Interpretation Page 15, paragraph 1, line 12-13: While it is important to note that the true prevalence of dementia is likely underestimated, given the general prevalence of undiagnosed dementia, the findings in this study may be overestimated if the methods used captured more severe dementia cases for which claims appear. <b>We agree and have added a companion statement in resubmission (page 14) indicating that (although prevalence may be underestimated when administrative data are used) the consequences associated with identified dementia may be greater than the consequences associated with unidentified/milder dementia.</b></p> <p>References The title for reference 15 is incorrect. <b>This has been fixed in resubmission.</b></p>