Reviewer’s report

Title: Relationships between Orthostatic Hypotension, Frailty, Falling and Mortality in Elderly Care Home Residents

Version: 0 Date: 13 Dec 2018

Reviewer: Marie Therese Cooney

Reviewer’s report:

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This is an interesting manuscript and describes an important issue - frailty in LTC residents and its relationship with falling and OH.

I appreciate the use of routinely available data and the use of an orthostatic measure which is practical to perform in this population. Both will make translation of the results to clinical practice more feasible.

The description of the frailty index is interesting - however, I would suggest that the authors validate it using an outcome such as mortality or progression to a higher dependency and care needs level within a certain timeframe. It would be surprising if this information was not available for analysis. Additionally it would be interesting to see how this frailty index compared to a frailty score for example Fried method or even the Rockwood score if this was not available.

the authors state that frailty was a predictor of both OH and falls risk. However, the statistical significance of this is not reported. Looking at figure 6 and the AUROC curves I would suggest these are very unlikely to be statistically significant. The reported AUROCs of under 0.6 also demonstrate poor discrimination.

I would suggest that the authors either address these issues or limit their conclusions to 1. a description of the levels of frailty in LTC (ideally with validation or correlation of FI) 2. the association between frailty and OH and falling 3. Omit the use of frailty as a predictor of future falls - I do not think it is supported by the ROCs. Also, as shown in figure 2 - the not frail group had less falls than the frail group, but the rate was still half of the frail patients fall rate.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
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Yes

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No

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