Author's response to reviews

Title: Development of the interRAI Pressure Ulcer Risk Scale (PURS) for use in Long-Term Care and Home Care Settings

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Author's response to reviews: see over
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The Editors
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Re: MS: 2056336432383138 Development of the interRAI Pressure Ulcer Risk Scale (PURS) for use in Long-Term Care and Home Care Settings Jeff W Poss, Katharine M Murphy, Gail Woodbury, Heather Orsted, Kimberly Stevenson, Gail Williams, Shirley MacAlpine, Nancy Curtin-Telegdi and John P Hirdes

On behalf of myself and my co-authors, I am submitting with this summary cover letter a second revised version of the manuscript.

I thank referee 2 for the additional helpful comments on the manuscript. A point-by-point response follows.

Major Compulsory Revisions
(1) Analysis, first paragraph, last sentence: Please explain what exactly the c-statistic is (e.g. provide a source) and how do you planned to interpret results (What is "good", what is "bad").
   - We have added an example for interpretation of the c-statistic and a reference. We have also stated that values will be interpreted to differentiate models relative to each other. There are no agreed upon values of C that are bad or good in an absolute way, we have stated what values of 0.5 and 1.0 mean.

(2) Analysis, second paragraph: What decision tree models do you used (Chi square based?)?
   - We have clarified that these are chi-square based (for your information, but not stated in the paper, the SAS interactive decision tree tool provides a ranked list of candidate variables by the negative log of the chi-square test of the target variable (here new pressure ulcer) and the optimized splitting choice (two or potentially more branches, user-definable))

(3) Analysis, third paragraph: Did you replicate the scale construction or do you only applied your "scale" in other data sets?
   - We applied the scale, the word ‘construction’ has been removed

(4) Results, second paragraph, third sentence: Please distinguish clearly between results reporting and interpretation. Furthermore, it is debatable whether the high correlations are "surprising" or not (see for instance DOI 10.2147/JMDH.S9286) but whether ADL scores are correlated with each other does not matter. Pressure ulcer risk scale scores, ADL scores and many more belong to the causal indicator model in the sense of Bollen and Lennox (1991) where internal consistency plays no role.
   - We have removed this comment which was only observational in nature.
(5) Results, fourth paragraph, last sentence: I feel there is something wrong with the figures or there is something missing, e.g. text. The sentence ends with reference to Figure 1 and the next paragraph starts with Figure 3.
   - This appears to have been a formatting/captioning issue with Microsoft Word, I cannot see what you are describing in my file. We hope it does not reappear.

Minor Essential Revisions
(1) Study Overview, Phase 2: "Testing the predictive performance …" of what, please add.
   - We have added language to make this clear.
(2) Discussion: In the introduction you mentioned that there is no evidence that the application of the Braden and other pressure ulcer risk scales reduces pressure ulcer incidence or improves patient outcomes. The same may be also true for your newly developed score. I would add that to the discussion. I would also recommend adding that we need high quality diagnostic RCTs to investigate whether risk scores or prediction rules have any effect except for paperwork burden.
   - This is fair and we have added four sentences to the discussion to caution the reader of the lack of strong evidence showing positive effects of scale use