Reviewer's report

Title: Method for Assigning Priority Levels in Acute Care (MAPLe-AC) predicts outcomes of acute hospital care of older persons - a cross-national validation

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Reviewer: Kathryn Bowles

Reviewer's report:

This is a very interesting manuscript that will make an important contribution to the literature. There are some concerns that need to be addressed to strengthen the clarity and impact of the findings.

Major compulsory revisions: There is a discrepancy between the purpose of the MAPLe system stated on page 6. In one sentence it is stated that the tool determines home care service allocation. Then in the next sentence it says the tool was derived to predict nursing home placement and caregiver distress in home care. Which is it? Further, the authors go on to test the tool's capacity to predict discharge to home, nursing home and time to death. What is the justification for using a tool that predicts home care allocation to now predict death etc.? The reader needs more clarity and/or consistency in the purpose of the MAPLe. Also, on page 7 the authors say the tool identifies people in home care with complex needs. So far the tool has three distinct purposes. Which is it?

On page 5 in the background it would be more convincing to give actual readmission rates than to merely state that they are high.

On page 7 the authors state that the MAPLe could support communication and coordination between acute and home care. How is this expected? The tool potentially affects acute care discharge planning but as described does not seem that it would affect communication and coordination. This is more likely from a tool that shares information across settings. The claim does not seem valid.

One page 7 the purpose of the study is stated to modify and cross walk the MAPLe system form home care to acute care. Is this the purpose of the study? If it were then the manuscript should be about how the tool was modified and details presented about the cross walk rather than a test of its predictive power in acute care.

Why isn’t discharge with home care one of the outcomes? On page 10 in the data analysis section it is listed as one of the main outcomes. Home with or without services must have been collapsed into discharge home. It would be an important contribution if the tool predicted who needs home care services. Why not analyze them separately? The investigators may not have had enough patients getting home care services to complete the analysis, but they do not state this.

In the methods the investigators should provide more detail about any modifications and how they cross walked the items. Who did the cross walk and
was there any type of validation or reliability checks done on the matches? Were any of the items modified or were they all exact matches. What percent of the items was an exact match? This is important for the reader to know that the meaning of the items did not change.

How does the predictive value of the AC version compare to the HC version? Does it perform equally well? There is not enough information about the original tool to make that determination.

On page 8 the second paragraph that starts with figure one, the reviewer cannot follow this description of figure one. The reviewer does not understand the four levels of priority and finds the figure hard to interpret. This is a reflection of not enough description given of the original instrument.

The Canadian instrument was translated from English (or maybe French?) to 5 Nordic languages. This seems to be a huge feat yet no detail of how this was accomplished is provided. Was there translation and back translation and who did it. Without this detail, doubt is cast on the validity of the translated versions.

The methods describe patients being consented after admission yet there was “pre-morbid” data collection. How was that data collected? Was the patient or family member asked to rate how they were prior to admission? Also, was self report data and proxy reported data treated the same? Are the items equally reliable no matter who reports them? For example, caregivers often rate function worse than a patient might self report.

The analysis of the discharge data lumped those with LOS < 7 days with those having LOS >7 days. One would expect that patients with longer lengths of stay are sicker and therefore may skew the analysis by combining them with patients with shorter LOS. Can you separate them and re-analyze?

The area under the curve figures are not necessary given the presentation and analysis of the C-statistics.

On page 15 second paragraph, third sentence is awkward and confusing. The use of the terms “eye opener” is slang and the statement that the tool highlights the need for rehab or preventive services is a stretch beyond what the tools is meant to do.

The discussion is not clear whether the investigators recommend the tool be used upon admission or discharge or both. Please clarify. Page 16 seems to say use it pre-morbid, discharge or day 7, but page 17 says use it early in the acute care phase but is vague about when that is.

At the bottom of page 17 the authors need to be more direct about their point. It seems they are saying the items left out of the cross walk should be part of a discharge assessment but it could be clearer.

Page 18 substitute determine for “find out”

The literature seems a bit dated with many references from the mid to late 90s. Please update the literature on discharge planning and prediction of discharge referrals/disposition.

For figure 1 the reader would like to know what scales are used to measure
behavioral symptoms, medication problems, falls etc. The reviewer supposes these are items on the RAI but without being familiar with that instrument one is left to wonder how these items are assessed. Can the authors provide more detail on the RAI items?

Thank you for the opportunity to review this important paper.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare I have no competing interests