Reviewer’s report

Title: Outcome of Elderly Emergency Department Patients Hospitalised on Weekends – A Retrospective Cohort Study

Version: 0 Date: 28 Nov 2017

Reviewer: Fiona Lecky

Reviewer's report:

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Thank you for asking me to review this Single Centre study from the Netherlands which seeks to establish whether 2 day and inpatient mortality is subject to a weekend effect for older people with medical admissions.

The authors have studied more than 2,500 patients aged 65 and over presenting over 2 years from September 2010. Weekend was defined from midnight Friday to midnight Sunday. The analysis suggested a slightly higher crude mortality rate at the weekend which bordered on being statistically significant, however the effect lessened after adjustment for the increased acuity (MTS) and co-morbidity levels associated with weekend presenters. The authors conclude that care appears adequate for older internal medicine admissions in the Netherlands at the weekend.

The paper is well written, the analyses appropriate and clearly presented. My suggestions for improvement are relatively minor

1. Other publications in this areas have compared week day time 8am-6pm to weekend daytime as this is the biggest contrast in service and senior availability - after hours services during the week are often more similar to weekend than week days. This would be a worthwhile further sensitivity analysis to increase the rigour of the findings (also week evening night 6pm-8am) to weekends)
2. The series of patients is relatively historical and it would be good to include a more up to date patient cohort if data is available.

3. It is a stretch to conclude from this single centre historical data that all Netherlands internal medicine services perform effectively for older people at the weekends. The discussion should reflect upon the evidence for the generaliseability of these findings.

**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?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable
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