Reviewer's report

Title: Preventing delirium among hospitalized older hip fracture patients: applying evidence to routine clinical practice

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Reviewer: Najma Siddiqi

Reviewer's report:

1. This is an important much neglected research area.
2. The objectives of the study are set out clearly, and the paper is well written.
3. Prevention of delirium using multicomponent interventions is supported by the evidence. The problems of implementing such interventions are well documented, and the use of computerised clinical decision support tools seems an appropriate approach to address these difficulties.

Major Compulsory Revisions

4. The results presented indicate a marked difference between the 2 hospitals, with little change overall, but a reduction from 42% to 19%. This raises a number of questions: Did the rates go up in the other hospital? The authors should present these results as well. Apart from the differences in attitudes and adherence reported by focus groups, were there other differences between the hospitals?
5. The authors conclude that the intervention was not effective. Was the study adequately powered, and was the design robust enough to support making this conclusion? I would suggest that limitations of design and size mean that the findings can only give preliminary and not definitive support to such a conclusion.

Minor Essential Revisions

6. In the background, section, 4th paragraph, the first sentence is unclear to me. It seems to say that ‘knowledge translation’ is the scientific study of the methods for closing the knowledge-to-practice gap?
7. Why were fractures caused by motor vehicle accident excluded?
8. Although the development of the order set is well described, a figure setting out the components of the order set would be very useful to help understand the intervention.
9. The outcomes- change in delirium rates, length of hospital stay etc are appropriate. However, the authors should acknowledge the limitations of using the chart-based method for delirium detection, which has a reasonable sensitivity but relatively poor specificity.
10. Did the 5 month post-implementation period start immediately after the order set was introduced, or was any time given to embed the intervention? This needs to be clarified, and commented on in the discussion as another potential
limitation in reaching conclusions about effectiveness. It is important to acknowledge the time it takes to introduce and embed complex interventions, and when an intervention can be expected to influence outcomes.

11. What method was used to analyse the focus group data?

12. The authors report a significant interaction between study phase as well as hospital. However, no details are given about the impact of study phase.

13. The Results & Discussion section should be separated out as it is difficult to follow in its present form.

14. The discussion should comment on the limitations of power and using the chart-based method.

Discretionary Revisions

15. A minor point, the reference in that sentence for the ‘recent’ systematic review indicates it is in fact 6 yrs old.

16. The Confusion Assessment method is described in methods, 3rd para, as ‘very accurate’. The sensitivity and specificity of the method, however, has been shown to vary markedly by training of the assessor.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests' below