Reviewer's report

Title: Diagnostic accuracy of the vegetative and minimally conscious state: Clinical consensus versus standardized neurobehavioral assessment

Version: 1 Date: 1 April 2009

Reviewer: Agnes Shiel

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This is an interesting piece of work and is well overdue as the previous studies addressing this question both took place in the 1990’s. Given the advances in the field one might have expected that the misdiagnosis rate would have improved. The fact that this study demonstrates that it has not is, in itself an important finding.

All of the revisions below can be considered minor discretionary revisions.

The question is well defined and clear. The methods used to answer the question are appropriate from both research and clinical perspectives and the comments below are suggestions which may enhance the clarity of the paper.

As some subjects were in an acute phase of recovery, had all of these emerged from coma and, if so, how was this defined (e.g., eye opening, GCS total)?

The section of the methodology describing the diagnostic criteria (bottom of the 4th page) is accurate but it is complicated as presented on the first reading. Perhaps if this information were presented in a Table, it would be more accessible.

It is not clear from the methodology firstly, whether all members of the clinical team assessed each patient or whether this was done by a subgroup. It is also not clear in the methodology how much time was spent with the subjects either by the research team or by the clinical team – this could be significant as the longer one spends with these subjects, the greater the likelihood of observing a purposeful response. This is addressed to some extent in the discussion but a brief sentence in the methodology to explain would make it clearer.

The results of the study are clear and data are analysed appropriately. The question above regarding coma raises itself again and could be addressed here. In the discussion it was mentioned that the acute subjects were assessed using the Glasgow Coma Scale. Are these data available / do they confirm that all subjects had emerged from coma. Again, a brief statement to this effect will address the question.

The discussion is clearly written and addresses the obvious questions. The limitations of the study (e.g., lack of blindness of research team) are addressed and accounted for. As pointed out above, some of the information presented in
the discussion regarding the methods of assessment (i.e. time spent with subject by clinical team, use of GCS) could be included in the method for the sake of clarity.

The conclusion is accurate and based on the results of the study. However, the authors may wish to comment on the point that, despite the advances in the past 15 years that the rate of misdiagnosis remains the same, regardless of the importance of accuracy of diagnosis for this client group.

**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.