Reviewer's report

Title: Drivers of hospitalization cost after craniotomy for tumor resection: creation and validation of a predictive model

Version: 3
Date: 2 November 2014
Reviewer: Wendy Ziai

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This is an interesting paper using the NIS to assess Independent drivers of hospitalization cost after craniotomy for tumor resection. Independent drivers of hospitalization cost were length of stay, number of procedures, hospital size/region and patient income. I have some methodological concerns that should be addressed.

Major Compulsory Revisions

1. What does post-operative neurologic complications include? It would be of interest to show frequencies in a table – ie bacterial meningitis, ischemic stroke, hemorrhage, seizures, etc. to understand which are predominant.
2. Why was Modified Charlson comorbidity index not included as a variable of interest? This variable is available in the NIS.
3. Although outcomes may not be modifiable drivers of hospitalization costs, these should be included: died during hospitalization, and withdrawal of care. Was there a significant difference between favorable and unfavorable discharge with regards to hospital costs?
4. Is it possible to determine readmission rates for complications from the primary admission for craniotomy for brain tumor? Moreover, how were readmission for a complication distinguished from the primary admission for craniotomy, or could more than 1 admission per patient be included?
5. Baseline patient and hospital characteristics should be presented in the main paper in a table.
6. A table showing the model results should be presented at least in the supplementary material.
7. Authors should discuss in their findings why they think there may be a racial and a geographic distribution that is present for hospitalization cost.
8. What does number of procedures performed include? These should be presented in a table: Ventricular shunting, Tracheostomy, Gastrostomy, etc.
9. The reliability of coding number of admission diagnoses should be further discussed as a limitation.

Minor Essential Revisions

None
Discretionary Revisions
None

**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