Reviewer's report

**Title:** Incidence and costs of bleeding-related complications in French hospitals following surgery for various diagnoses

**Version:** 4  **Date:** 13 July 2012

**Reviewer:** Darryl T Gray

**Reviewer's report:**

This is a further improved, re-revision of a manuscript on a study of hospital costs and prolonged length of stay associated with transfusions and bleeding consequences seen in French surgical inpatient stays. It addresses an important issue and provides useful and interesting new data. However, the analysis and presentation still raise some (generally addressable) issues, several of which were raised in prior reviews. Specific comments follow. Those which reflect issues that were at least partially raised in prior reviews are enclosed in starred brackets, i.e., *[ ]*:

**Major Compulsory Revisions (issues that need to be addressed in some fashion. Revisions to the analysis itself may or may not be required.)**

**TEXT**

1. *[Handling of inpatient deaths during stays of less than 2 days should be noted in the text.]*

2. *[It would appear that the different spectrum of ages, procedures, co-variates and DRGS associated with pediatric surgical cases would argue for separate analyses of such cases.]*

3. *[It appears that billed physician fees (rather than those actually paid or expected to be paid) were included in private but not public sector hospital “costs”. This systematic difference and its potential effect on study results should be more fully discussed.]*

4. *[Why didn't the analysis address possible clustering by hospital (which may reflect case-mix, propensity to transfuse, etc)? It appears that hierarchical modeling using generalized estimating equations or other approaches were not considered as a way to adjust for clustering of cases within hospitals. Can the authors explain why not? If a given hospital had generally higher costs, and, as an independent issue, had more bleeding complications, then some of the cost difference attributed to bleeding would actually be due to hospital characteristics. The potential implications of this should be discussed.]*

5. *[Given the potential for non-Gaussian distributions of hospital costs and/or LOS, the skewness of the cost and LOS data should be described. Given recent*
work done on handling non-Gaussian distributions of hospital costs, SOME discussion, based on papers published more recently that 2000, is still warranted. The ways in which non-Gaussian distributions of hospital costs were accounted for in the regression analyses should be better described.]*

6. *[It is still unclear how or why LOS and costs were adjusted for age, gender, # of procedures, etc. for the bleeding complications group. It is still unclear why adjusted costs and LOS were not calculated for cases without bleeding.]*

7. The authors estimate that they may have missed 2/3 of the blood product units transfused in the study sample. This admission is commendable. However, they should discuss why this does not seriously compromise the validity of the study results.

8. It is possible that, in total, the failure to analyze peds cases separately, the failure to adjust for clustering within hospitals, the (apparent) failure to transform skewed cost and LOS data and the failure to capture up to 2/3 of transfusions (as one. but certainly not the only marker for bleeding complications) together represent serious flaws that should lead the authors to label their results as pilot work that should be extended in other analyses before any real conclusions can be drawn.

Minor Essential Revisions:

1. *[Again, what are “tariffs” as the term is used in this context?]*

2. *[As was previously noted, references with URLs should better describe the title of the actual citation (with English translations).]*

3. *[All Figures should have figure #s. It would help to include titles with the figures.]*

**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.