Reviewer's report

Title: Impact of Bleeding-related Complications and/or Blood Product Transfusions on Hospital Costs in Inpatient Surgical Patients

Version: 4 Date: 20 April 2011

Reviewer: Darryl T Gray

Reviewer's report:

This study of hospital costs associated with post-operative bleeding complications/interventions is generally well-written, addresses an important issue and provides useful and interesting new data. The revised re-submission addresses many issues raised in prior reviews although the presentation still raises some (generally addressable) issues.

Minor Essential Revisions

As the authors could not exclude transfusions required as a consequence of the original disease or injury, the transfusions counted are not all a consequence of surgery as is stated in the abstract and in various places in the text. This should be re-worded, e.g., as “transfusions or bleeding-related complications” where applicable. Specific other comments follow, including those on some issues that appear to remain from the prior review.

Word counts for the abstract and text need to be updated to reflect the new revisions. Pages should be numbered

TEXT:

Materials and Methods

2nd paragraph: It would STILL appear that the ~5% of admissions with multiple procedures should have been categorized by the single most relevant procedure (based on some specified criteria) and then counted just once in the analysis or excluded from the base case analysis because of problems with determining which surgical procedure sub-group was most appropriate. It would appear that a re-analysis that does not double count these cases should perhaps be the base case analysis, with the analysis where such cases are double-counted as the secondary analysis. Admittedly this might only apply to (or change results for) surgical procedure sub-groups more affected by this double-counting.

4th paragraph: Since the authors analyzed hospital-perspective costs, why was the Consumer Price Index ratios used as opposed to using available Producer Price Index ratios for inpatient med/surg care? It should be noted that listed costs
do not include charges, re-imbursement or other estimates of costs of care provided by physicians (e.g., surgeons, radiologists, anesthesiologists) who are generally not hospital employees. Including estimates of such costs would presumably have increased costs and cost differences.

5th paragraph: How was "pre-operative use of substances that promote hemostasis" used in the model?

Results

Data in the tables do not need to be repeated in the text.

2nd paragraph and elsewhere: Denominators (e.g., cardiac) should immediately follow individual listed percentages (e.g., 2.5%). It is too difficult to follow strings of percentages followed by strings of denominators.

3rd paragraph: Denominators for various percentages listed in this paragraph are unclear. The difference between rates for Hispanics (18%; See Tables comment below) and other groups appears to be clinically as well as statistically significant and worthy of comment. Also, Hispanic is an ethnic, not a racial category. The higher complic rate (27%) among pts who did have prior hemostasis care should be noted and commented on, although it may reflect pre-op clinical conditions meriting such care.

Discussion

Data should be presented in Results or in the tables rather than being first mentioned or repeated in the Discussion. Noteworthy results should be commented on in the Discussion.

5th paragraph: The meaning of the last sentence in Text page 13 is unclear. What is the basis for asserting that trauma pts probably represent only a small % of study pts. U of Michigan Hosp is not in a major urban area and its proportions of trauma vs (other) gen surg cases may not apply to this study population.

Tables

The data as presented in Tables 3 and 4 could be more informative. For example, it would be better to show the % of whites who had complications (23.0%) vs the % of blacks (24.4%) and Hispanics (18.0%). “Others” are listed as 17% of the study population; presumably race/ethnicity was actually missing for a large proportion and these should be so identified (distinguished from Asians, etc.).

Rates among other categories (diabetics, Medicare recipients, etc. should also be listed and clearly stated as the % of all diabetic surg pts who had transfusions or bleeding-related complications vs the % of all diabetic surg pts who did not have transfusions or bleeding-related complications, for example.

Figures:
Shading for complics vs no complics should be the same in Figs 1 and 2.

Discretionary Revisions

Word counts for the abstract and text need to be updated to reflect the new revisions. Pages should be numbered

TEXT:

Background

1st paragraph. As was noted in prior reviews, deaths from bleeding due to the trauma that precipitated admission are not directly relevant to discussions of bleeding that occurs as a surgical complication.

Results

Data in the tables do not need to be repeated in the text.

3rd paragraph: Medicare status is largely driven by age and is not informative independent of age

Discussion

9th paragraph: Clarify that data at the bottom of the page (which may belong in Results anyway) are for models excluding doubly-counted cases

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