Reviewer's report:

Title: Impact of SAMU on the profile of non-traumatic emergency cases treated at a university hospital: a research study

Version: Date: 8 January 2007

Reviewer: Bekele Afessa

General
In this retrospective study, Lopes et al aimed to determine the impact of SAMU in a tertiary care hospital. They compared two periods, May 1996 (pre-SAMU) and May 2001 (post-SAMU). They used APACHE II to measure the severity of illness of their study population. They found increase in patient age, co-morbidities, hospital complications and mortality during the post-SAMU compared to the pre-SAMU period. These increases were more pronounced for patients admitted to the Internal Medicine service.

The manuscript is well written. The study is interesting, worthwhile, and important. The conclusion of the study is supported by the presented data. However, there are some limitations that need to be addressed by the authors.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The study compares two months, five year apart. Several demographic and health care delivery changes as well as advances in medical diagnostics and treatment may have occurred during this five year interval. These changes and advances may play confounding roles. I request that the authors address the issue that these confounding factors may have influenced their findings.
2. SAMU was reorganized in January 2000. Considering the lack of inexperience during the first year, the post-SAMU period should include experience of 5 years. Limiting the study to just one month weakens the strength of the study.
3. The authors excluded patients whose length of hospital stay was less than 12 hours. Was there a difference in the proportion of admitted patients who were discharged in less than 12 hours between the two periods? This information may have some importance for health care delivery.
4. Define co-morbidities in the methods section.
5. Define complications in the methods section.
6. Describe more information about the hospital setting. How many beds does each department have? How many and what type of intensive care units does the hospital have? How many total ICU beds does the hospital have?
7. On page 5, the last sentence of the fourth paragraph, the authors cited references 18 to 25 to justify their use of APACHE II in their study. Several of these references do not use APACHE II. More over, APACHE II is usually used in patients admitted to the ICU.
8. The authors stated the area under the ROC of the APACHE II in their study population. I suggest they provide information about the calibration of APACHE II.
9. Table 4 does not deliver the information clearly. I believe the authors are telling the reader that there were statistically significant differences in the APACHE II predicted mortality rate between survivors and non-survivors in all groups during both study periods. I suggest stating this fact in the text and deleting Table 4. If the authors insist in keeping the table, it needs to redone.
10. The authors need to tell us whether there were statistically significant differences in severity adjusted mortality rates between the two periods. This can be done by using multiple logistic regression analyses or calculating the standardized mortality ratio with its 95% confidence intervals.
11. The discussion section provides an excellent description of SAMU. However, most of it has no relationship to the current study.
12. The discussion should include a section to address the potential limitations (weaknesses) of the study.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Spell SAMU or replace it with descriptive words in the title. As written, most readers (including this reviewer) will not understand the title.
2. The study included patients older than 13 years. Why was 13 selected to define adulthood?
3. On page 5, second paragraph, change “discharge or death” to “alive or dead”.
4. The authors utilized 3 softwares for statistical analyses. SPSS alone would have been adequate to perform all analyses.
5. Add the versions to the statistical softwares.
6. Use one decimal place for the percentages including the tables (E.g. 83.9 instead of 83.89).
7. In some of the tables, the authors used 2, 3 and 4 decimal places for the p values. I suggest being consistent.
8. Change mortality “coefficient” to mortality “rate”.
9. Change the title of Table 3 to “Differences in APACHE II mortality risk between the two study periods”.
10. Replace “(x ± s)” with “, mean ± SD, %” in Table 3.

Discretionary Revisions (which the author can choose to ignore)


What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.