Reviewer's report

**Title:** Aetiology, antimicrobial therapy and outcome of patients with community acquired severe sepsis: A prospective study in a Norwegian university hospital

**Version:** 1  **Date:** 31 August 2013

**Reviewer:** Andre Kalil

**Reviewer's report:**

1) The authors evaluated the characteristic of severe sepsis in a Norwegian university hospital and concluded that compliance with antibiotics was lowest among elderly patients, and that time-to-initial antibiotic dose significantly affected in-hospital mortality.

2) Introduction was short and objective.

3) Methods need to describe how the authors verified their regression models for collinearity and for calibration (goodness-of-fit tests such as the Hosmer-Lemeshow statistic).

4) Results section describes an annual incidence of 2.2/1000 hospital admissions. Please comment on how your hospital incidence differs from the other hospitals in your country.

5) Only 4% of all cases admitted with the diagnosis of severe sepsis did not have any infection. This is much smaller than previous studies – please address the reasons for that.

6) On page 11, table 1 show that only 11.8% of patients had the abdomen as the source of severe sepsis. This is 2-3 times lower than recent sepsis randomized trials. Please explain your findings.

7) Why the authors chose the 6h cut-off for time to antibiotic administration? It seems too long for current standard of care or for the last two versions of the surviving sepsis campaign. I suggest the authors to use these data as a continuous variable, so they can avoid arbitrary categorization, get more detection power, and produce more reliable information. Alternatively, 1 to 2 hours cut-off would be more in line with current guidelines.

8) Table 4 describes that patients with negative microbiological samples had 2-fold higher mortality than those with positive microbiological samples. Please explain these findings.

9) The total number of deaths was 55, so the multivariable model should not have more than 5-6 variables. However, Table 4 suggests that the authors entered many more variables than that, which likely overfit the regression model. Please describe exactly which and how many variables were included in the regression model, and how many models were done.
10) Please update your discussion section after addressing the above comments.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests related to this paper.