Reviewer's report


Version: 1

Reviewer number: 1

Referee's comments to the author(s)

Only this section of the report will be returned to the authors. Do not comment in this section on the interest/importance level of the manuscript, or whether or not the manuscript should be accepted.

Many of the results mention in hospital mortality, but the method section does not explain how mortality was established: was this from hospital administrative data, cross linking to death certification or other method?

The European Standard Population was changed in 2013, have you used the standard in use at the time of data collection, or the one in use at the time of publication?

A weakness of the study not mentioned is the problem with hospital discharge data not capturing cases that don't present to hospital. McPherson et al, http://bmjopen.bmj.com/content/3/8/e002586.short, showed that this might be 6.5% of all deaths associated with sepsis, suggesting that the values reported are an underestimate.

If mortality from sepsis is increasing in Spain then this implies that more healthcare resource should be allocated to treating sepsis, an important policy point that is not made clear.

If case fatality is decreasing then the reasons for this need to be explored in detail as that would potentially give ideas to how other countries should start treating sepsis. They mention 'education initiatives' and give a reference to a 2008 paper. More detail on this point would be valuable.

Table 3 - the p values column does not add much information since nearly all differences are statistically significant because the denominators are so large. A better approach would be to give the value and confidence interval for all values and remove the p-value column. The confidence interval for a proportion (percentage) could be calculated by the Agresti-Coull method, http://www.jstor.org/stable/2685469. Other values could be given as value +- 2se.

Figure 1+2 - these would be clearer if they were broken up into separate plots for separate y axes, e.g. fig 1a - number of deaths, fig 1b - mortality etc. Error bars may help as well, but may be too small to show