Reviewer's report

Title: Statistical software applications used in health services research: analysis of published studies

Version: 1 Date: 3 June 2011

Reviewer: Michael Mitchell

Reviewer's report:

This is a very well written and very interesting manuscript. It is very interesting that such a review has not been performed before this.

Major Compulsory Revisions

None.

Minor Essential Revisions

#1. The discussion section mentions the varying editorial policies regarding the identification of statistical software. Did the manuscript mention the exact policies for the journals that were studied? Clarifying this would be very useful.

#2. One of the reasons, I presume, that it is desirable to state the software that is used is because the results might vary across software packages. For common kinds of statistical problems (e.g., linear regression, analysis of variance) it is extremely unlikely that there would be variation in results across packages. However, for other modeling techniques (such as multilevel logistic regression), there can be considerable differences among packages due to substantial differences in estimation techniques. I think noting one or two such examples would strongly motivate the importance of knowing the exact statistical package that was used. Some people might believe that all packages always give the same results, and believe that differences in results based on packages is a "thing of the past". It may merit noting that advances in statistical technology appears to be accentuating the possibilities for differences in results due to differences in estimation methods.

#3. Were the articles examined for not only the statistical software used (e.g. Stata version 11.1) but also the exact command(s) used (e.g., the "logit" command). My impression is that the articles were only examined for the former (the software program and version number), but not necessarily the latter (the exact command). It would be useful to clarify this.

#4. Please note that Stata is written as Stata and not STATA.

Discretionary Revisions

#5. Based on their experience reviewing the articles for this paper, would the authors like to comment on whether it might be useful or interesting to focus on the exact command used within the statistical package in the future?
#6. Were there not enough instances of the use of R to merit it as a separate category?

#7. Were there enough instances of any of the specialized packages to comment on their percent usage. I fret that the numbers might simply be too small, however, it would be interesting to see if there were any substantial increases (or decreases) in some of the specialized packages (such as the change in the usage of SUDAAN.)

**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 am an author of books published by Stata Press.