Reviewer’s report

Title: Cost-effectiveness analysis of guidelines for antihypertensive care in Finland

Version: 3 Date: 13 July 2007

Reviewer: Torbjørn Wisløff

Reviewer’s report:

General

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

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

Second line page 4: “and modelled in the but such”. Type-o?

Why do the model stop at the age of 80? Common recommendations for health economic evaluations recommend to model until death, and at age 80, only about 56% is dead.

The authors have conducted several useful and informative one-way sensitivity-analyses. However some form of multi-way sensitivity is recommended if feasible. In this study, it might be very time-consuming due to the complexity of the model, it may also take some focus away from the objective if even more is added to an already packed analysis. If it is possible to reduce the number of one-way sensitivity analyses and add e.g. a probabilistic sensitivity analysis, I think it would improve the paper. If that is not feasible, I would recommend for the authors to write an additional article with several features based on probabilistic sensitivity analyses.

Page 9 last line:
Should “collated” be “collected”? 

Page 10
All costs are from 2001. Because prices on some pharmaceuticals have decreased substantially the last years in several countries, it seems a bit odd to use 2001 costs on all drug costs. If this is the case for any of the 5 pharmaceuticals in this study, newer prices should be included. If costs have not decreased substantially, this should maybe be noted in the paper.

Based on the effects in table 8, some results in Table 1 (additional file 7) is a bit
curious. For example will everyone in BPG2 and BPG1 become better with treatment (move to BPG1/0 or BPG0 respectively). Is that reasonable considering that in real life there would be some non-adherence? Maybe should some extent of non-adherence be included in the analyses?

Figure 1: It seems counterintuitive that some of the analyses in BPG 2 and 3 should be orange or red. From the description of the guidelines it seems as if there would always be an effect in terms of life-years in these two groups. However, where the figure is orange or red, there is a negative effect of changing to ACCG guidelines.

Discretionary Revisions (which the author can choose to ignore)

The authors seem to have conducted thorough searches in most relevant databases. Is there a reason for not searching OHE-HEED as well?

In the sixth line from the bottom of page 3; Why the word "especially"? It is not clear from the text why this point is more special than others.

When choosing a Markov model, it is usually recommended to use a cycle length which best reflect the true disease progression. For example is there after the onset of CVD a non-negligible probability of getting CVE or die in relatively short time (<<5 years). This may influence the effects when discounting. Have the authors considered this?

Have the authors used half-cycle-correction when modelling?

Page 6, last sentence:

The increase in blood pressure level of 10 mmHg and 6 mmHg prior to allocation of the four BP groups seems a bit arbitrary. If this is based on some kind of evidence, it should be stated. If not, maybe some kind of justification would be in place.

The authors have based their analyses on the effect of drugs on blood pressure level and from there modelled until adverse events. Because most of these drugs also have been studied and reported in trials with direct effect on clinical outcomes, the use of such evidence of effect would usually decrease the uncertainties surrounding effect. Have the authors any reason for not using efficacy data based on trials with clinical endpoints? At least should the results of their study be validated based on data from such trials.

Figure 3 is not very informative as it is maybe some subgroups (men/women or age groups) should have different forms or colours. Or maybe a line between points in the same group (BP or age).

Page 16: I am not sure whether a 6 year old RCT is considered “recent” any more.

Page 19 last paragraph: As stated, the omission of cost data associated with
Elevated blood pressure is an omission that results in an underestimate of the cost savings with treatment. They state that the omission is due to lack of reliable data. However, it should not be impossible to get some kind of data on this. If probabilistic sensitivity analyses were conducted, then value of information analyses is relatively easy, which could give indications on whether getting new and more accurate data on these cost issues would be worthwhile.

Additional file 1, table 6: It seems strange to have the same proportion of people in all blood pressure groups to have the three different treatment regimens. Wouldn’t it be more realistic if a bigger proportion had for instance triple therapy in BPG3?

**What next?:** Accept after minor essential revisions

**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