Reviewer's report

Title: A cost-utility analysis of nursing intervention via telephone-follow up for injured road users

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Reviewer: Alyn Lewis

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From Figure 1, it would appear as though randomisation was carried out before consent. This is curious to me and an usual scenario, and is prone to 'selection' bias. From the Figure this would appear to be the case since a larger proportion of participants (relative to those who were randomised) were in the intervention group. I welcome the authors to comment on this – and if this is a limitation (and possible source of internal bias), it should be noted in the text.

Methods – Participants (page 6). The sentences: “The injuries were classified … MAIS 2+” are not clear to me – this needs to be explained more fully.

Table 1 includes P-values. I don’t think these are necessary – if we assume randomisation has been performed legitimately, then we can expect about 1 in 20 tests of true chance to be statistically significant – this is argued in the CONSORT statement for research guidelines in clinical trials.

It is curious why only the intervention group received a 3 month follow up questionnaire. This is a limitation in the context of being able to compare the intervention and the control group.

QALYs are usually derived using ‘area-under-the-curve’ methods, thereby using baseline and follow up EQ-5D figures to generate the values. The mean AUC-derived QALYs are then compared between intervention and control groups to obtain an estimate of the mean difference in QALYs (which traditionally constitutes the denominator of an incremental cost-effectiveness ratio (ICER)). The authors have used a simpler method of obtaining differences in the QALY by taking differences between EQ-5D at follow-up only (thereby presuming equality in baseline health status). In fact, the method used may not be immediately transparent – though I do follow what has been done – and the figures do approximate the precise estimate of QALY values. However, it is to be noted that random/chance differences in health status often do occur at baseline – and therefore it is my opinion that a more rigorous method of calculating the QALYs for both study groups should be adopted taking into account baseline and follow up EQ-5D scores.

Costs are presented using 2008 values. However, the study was carried out between 2003 and 2005.

The source of the wages of the registered nurses is not clear. Where was this
derived from, and what was the mean wage per hour (which was not specifically stated in the text)?

The main cost (i.e. the cost of the intervention) has been included – which is covered by the wage/time of the nurse input and the associated costs. This being the case, the control group have zero cost. However, intervention costs reflect one aspect of the direct healthcare of the patient. Other aspects of the direct healthcare are not covered e.g. visits to other health care professionals during this time. Presumably patient costs have been excluded as it is presumed this would not be a significant outlay. Finally, productivity costs have not been covered. In the area of injury – this would represent a significant cost (albeit a societal cost and not a cost necessarily borne by the healthcare system). Therefore the economic costing evaluation used is a simple one – based on intervention cost alone. The recognition that this is a crude cost comparison should be made. If data is available on time off work and other health care resource use, a more comprehensive and generalised cost comparison could be made.

The ICER (incremental cost effectiveness ratio) calculated from the difference in cost relative to the difference in QALY is the recognised standard measure of cost-effectiveness. However, this is a point-estimate. What is missing is some indication of the spread of the data estimates, which may be covered graphically (e.g. by cost-effectiveness planes). An alternative is to simply have confidence intervals for the data estimates.

Reference standards are quoted by the authors for acceptable cost-per-QALY estimates. These are very important for providing the basis for examining whether the new telephone resource is worthwhile or simply too expensive given the relative benefit it introduces. I gather that 16000 SEK is low and therefore the intervention considered to be worthwhile. This is put in context of conclusions from a stroke study. Perhaps the authors could also express this in relation to the value of a casualty provided by Persson (as stated on page 3), and also cross compare the derived cost-per-QALY values against other well known standards from other countries (perhaps as an exercise in determining its legitimacy in other places).

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