Reviewer’s report

Title: A cost minimisation analysis alongside a clustered randomised trial in teledermatology

Version: 5 Date: 18 February 2010

Reviewer: Wilbert van den Hout

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1. My previous objection to the estimate that was used for preventability originated from the fact that it was unclear to me that patients in the intervention group actually received treatment from their GP, after the teledermatology advice from the dermatologist. As a result, the authors are correct to reply that the difference in preventability is a treatment effect and not a characteristic of the patient population.

It is not explicitly stated in the paper that in the trial the GP provided treatment. The description of the intervention group in the methods section ends by stating that the dermatologist advised the GP. At least some of the readers may conclude that the researchers have chosen a trial design in which the advice by the dermatologist was not actually followed by treatment by the GP.

2. Now that I understand why the authors consider the difference in preventability to be the treatment effect, I am still not convinced that this is the correct estimate. Data on preventability in the trial could be missing for two reasons: because the patient did not visit the dermatologist (type-1) or because the patient did visit the dermatologist but no data were obtained (type-2):

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Control</th>
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</thead>
<tbody>
<tr>
<td>A. Total 312 293</td>
<td>B. No visit to dermatologist (type-1) 48 (15.4%) 18 (6.1%)</td>
</tr>
<tr>
<td>C. Visit to dermatologist 264 275</td>
<td></td>
</tr>
<tr>
<td>a. Preventable 78 (39.0%) 31 (18.3%)</td>
<td>b. Non-preventable 122 138</td>
</tr>
<tr>
<td>c. Data missing (type-2) 64 106</td>
<td></td>
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</table>

The trial shows that the numbers of both types of missings are significantly different: in the intervention group type-1 patients are more frequent and type-2 patients are less frequent.

The authors assume that type-1 patients are recovered (page 560 in Arch Dermatol. 2009;145:558-564). According to this interpretation, the difference in type-1 patients is a result of the intervention and these patients should be classified as preventable.
In the same paper, the authors also assume that type-2 patients are missing by oversight or by mistake (when the patient visited a dermatologist in a nonparticipating hospital). According to this interpretation the missingness would be at random and it would be reasonable to disregard the type-2 patients (which is indeed what the authors did by using the estimate \( a/(a+b) \)). However, the difference in the number of type-2 patients is statistically significant (64/264 versus 106/275, \( p=0.0004 \)). This excludes a totally random explanation, so the difference in type-2 patients must also (in part) originate from the intervention. It seems reasonable to assume that missing data are more frequent among recovered patients, so the current approach is likely to overestimate the difference in preventability among those who visited the dermatologist.

One might argue that the conclusion of the current paper is not very sensitive to the precise estimate of preventability. However, the authors repeatedly acknowledge the importance of this parameter. Therefore, a more careful definition and discussion of this estimate seems in order.

3. (Previous remark R2.1) We continue to disagree about how the variability of the parameter should be defined: in my opinion it should reflect the uncertainty of the parameter, not the range of the obtained expert opinions. This is unfortunate, because the variability of the input is the main determinant of the variability of the output.

4. All other remarks were satisfactorily dealt with.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests