Author's response to reviews

**Title:** Effectiveness of mobile-phone short message service (SMS) reminders for ophthalmology outpatient appointments: observational study

**Authors:**

Elizabeth Koshy (e.koshy@imperial.ac.uk)
Josip Car (j.car@imperial.ac.uk)
Azeem Majeed (a.majeed@imperial.ac.uk)

**Version:** 2 **Date:** 1 May 2008

**Author's response to reviews:** see over
Dear Dr Kerr,

Title : Effectiveness of mobile-phone short message service (SMS) reminders for ophthalmology outpatient appointments: observational study

Manuscript ID 5224946301858912

Thank you for the peer reviewers’ comments, which we found very useful in revising our paper. We have addressed all the specific comments made and have attached a substantially revised version of the paper that we hope is now acceptable for publication.

Richard D Neal’s comments

Comment : The authors need to tone down some of their conclusions – e.g. 1st paragraph of the discussion they state that ‘sending SMS reminders led to…’ This is incorrect given the design (as they acknowledge elsewhere). The group having SMS reminders had fewer missed appointments, but the effect cannot be regarded as causal. More of this point needs to be made in the discussion.

- We have toned down the conclusions and changed the “sending SMS reminders led to”. It now reads “was associated with” (in the Abstract, Discussion and Conclusions sections – please see below) to recognise that this is not necessarily a causal association. We have also added a sentence to highlight that the association observed cannot be regarded as causal (please see below)

- We have modified the Abstract and Conclusions in the light of the comment above to the following :
“The use of SMS reminders for ophthalmology outpatient appointments was associated with a reduction of 38% in the likelihood of patients not attending their appointments, compared to no appointment reminder”.

- In the Discussion section we have added the following lines :
“Although there seems to be an association between the use of SMS reminders and a decrease in non-attendance rates, this is not necessarily causal and there could be confounding factors and biases which may partially or fully explain this association”
Comment: There is no mention of patient demographics or clinical details between the two groups. This seems to be a major omission. There is a huge age difference in mobile ownership and use and this needs to be reported (indeed it may account for the main finding). The clinical reasons for the appointment will also affect the ‘value’ to it given by patients and affect the likelihood of the appointment being kept.

Comment: Is the next step an RCT stratified by sociodemographics and clinical conditions?

- We have added the following sentences to the Discussion to highlight this limitation:
  “This study suggests that the use of SMS reminders could help to reduce ophthalmology non-attendance rates. However, the design in this paper is sub-optimal, and a rigorous randomised controlled trial, stratified by socio-demographic characteristics and clinical conditions, is required to determine if the potential benefits observed in this study can be replicated. Knowledge of the patients’ clinical presentation in the intervention and control groups is also important as it could affect the ‘value’ placed on it by patients and potentially affect the likelihood of an appointment being kept”.

We have also added these sentences to the Discussion to address the comment above:
  “We did not have demographic information available relating to age in either groups and recognise this is a weakness and could account, in part or fully, for the observed difference. However, as younger patients are more likely to own mobile phones and also have higher non-attendance rates, the fact that the non-attendance rate decreased in the SMS group (who are more likely to be younger), suggests that use of SMS reminders may be beneficial to target younger patients”.

Comment: Some discussion on the ‘transient’ and dynamic ways in which technology is used and how useful this study will be in the future would be welcome. If the study were repeated again next year, would the effects be the same?

- We have included the sentences below to address this comment:
  “The uses of different technologies are very fluid and dynamic and so it is not known how the use of mobile phones and the use of SMS technology will evolve over time. However, it is anticipated that there will be an increase in mobile phone ownership and use of SMS messaging facilities in the immediate few years”.

Comment: Cost-effectiveness. This is tricky. There is always some wastage in a system and the real cost (if any) of a missed appointment is somewhat difficult to estimate. Indeed, if the appointments that are missed are those that aren’t really needed (difficult to prove, I know) then this is a wholly ineffective intervention. Some discussion please?

- We have included the sentences below to address this comment:
  “There is always some wastage in any system and the real cost of a missed appointment is difficult to quantify. It may be, in some cases, that the appointment may not have really been needed, although this is difficult to prove. For example, patients’ agenda may influence presentation and attendance [28]. Based on the “number needed to text” analysis, approximately fourteen people would need to be sent an SMS reminder to prevent one non-attendance. As the cost of outpatient appointments is considerable, this could be worthwhile but needs to be tested through a more rigorous economic analysis.”
William Hamilton’s comments

Comment: As it stands, this paper is publishable, with a few amendments. The authors need to acknowledge a bit more that their design was suboptimal.

- As above, we have highlighted that this is a "sub-optimal study design" and that a rigorous randomised controlled trial is now required to see if these results are replicated. However, we could not find any previous papers published on this area (in the field of ophthalmology). We therefore believe that this is new and original research and highlights the potential benefit of SMS reminders to help prevent outpatient non-attendance.

Comment: The authors should move the economic section – at least in part – to the results

- We have now moved part of the cost-effective analysis (economic) section to the Results section.

Comment: I’d love to see a NNT (number needed to text!)

- We have calculated a number needed to text (NNT) as suggested and added this to the text (in the Results and Discussion sections).

Comment: Some more clarity is needed in the methods on whether this was new appointments or FUs – it looks like new – at least for the intervention group.

- We have made it clearer in the Methods section that the appointments for both the intervention and control groups were for new (first) appointments.

Comment: The references are a bit dated, and I’m surprised Debbie Sharp and my editorial in the BMJ is omitted (this isn’t a request for a citation, promise!)

- We have added two new references, including William Hamilton’s BMJ editorial and Richard Neal’s study. Of the 28 references we have cited, only 4 of them are pre-2000 and 20 of the 28 references are 2003 or more recent. (Nine of these references are from 2006 or 2007)

Comment: I couldn’t see an ethics committee mention either.

- We had mentioned that ethics committee approval from Barts and the London NHS Trust had been obtained.
Helen Baker’s comments

Comment: The control group are incorrectly named historical and methods to not mention that this is “an observational comparison”

- We have taken out all references to “historical” controls (throughout the paper)
- We have also added in the Methods section that this is an observational study

Comment: ……those in the reminder group may be more/differently responsive because they have given their mobile number. This is mentioned in the limitations but could have been reduced by using a different study method. No attempt is mentioned to quantify such potential bias.

- We have added a sentence to the Discussion section to acknowledge that this participation bias may have potentially “led to an over-estimate of the association between SMS reminders and non-attendance rates”

Comment: The results in the study are very brief

- We have moved the cost-effectiveness analysis section to the results section – (as suggested by William Hamilton), as well as added the “number needed to text” analysis so the paper is more balanced now.

We look forward to hearing from you. Thank you for your help.

Kind regards,

Elizabeth
Dr Elizabeth Koshy
(Clinical Research Fellow)