

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Mobile phone text messaging for improving the uptake of vaccinations: a systematic review protocol
<b>AUTHORS</b>	Kalan, Robyn; Wiysonge, Charles; Ramafuthole, Tshepiso; Allie, Kurt; Ebrahim, Fatima; Engel, Mark

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Lawrence Mbuagbaw McMaster University, Canada
<b>REVIEW RETURNED</b>	31-Mar-2014

<b>GENERAL COMMENTS</b>	<ol style="list-style-type: none"><li>1. Under methods please update the section on registration. I believe the protocol is now registered.</li><li>2. Under types of intervention: "person needing a vaccination" is very vague. Provide more details as to who would be included and what kind of vaccines. Some vaccines are compulsory others are recommended.</li><li>3. Secondary outcomes: Consider other outcomes related to the process. For example, scheduled appointments for vaccination or vaccination records etc.</li><li>4. Search strategy: Specify time limits for data base and conference searches.</li><li>5. Measures of treatment effect: How will you deal with outcomes measured on a different scale. Describe the measure of variability for the mean difference.</li><li>6. Data synthesis: Reference the I squared statistics. Some of the proposed subgroups are not relevant to immunization. e.g daily reminders.</li></ol>
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<b>REVIEWER</b>	Pierre Verger Inserm UMR France
<b>REVIEW RETURNED</b>	10-Jun-2014

<b>GENERAL COMMENTS</b>	<p>The subject of this systematic review protocol is both interesting and important. The protocol is presented in a very clear, detailed and precise way. It is based on international standards. There are several points that would deserve some more discussion and/or explanation.</p> <ol style="list-style-type: none"><li>1) Vaccine coverage operational definition: vaccine coverage can be estimated by different methods (based on vaccine documents, on subjects' declarations, or also on health insurance reimbursement</li></ol>
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	<p>data...); this might have an impact on the evaluation of interventions: how will the authors deal with this?</p> <p>2) Intervention impact may depend on the context (cultural, sociological and economical) of the targeted country, population, territory... Again, how will the authors take this aspect into account in their review and analysis?</p> <p>3) Participants of the revised studies will be adults, children or their caregivers; will adolescents be excluded from the review? If yes, why?</p> <p>4) Acceptability of vaccines and –we hypothesize- interventions' impacts may greatly differ according to targeted groups (adults/children/adolescents) and also the type of vaccine: how could this be dealt with in the analysis, especially if the number of published studies included in the review process is not important enough to allow for multiple stratifications?</p> <p>5) Intervention scales may be very heterogeneous so that results at country level or district or municipality level will not have the same weight; a sentence regarding this specific problem should be added in paragraph "Data synthesis, assessment...")</p> <p>6) In the same paragraph, the authors explain that they will stratify their analysis on intervention type: regarding interventions with multiple components how will the authors proceed to take into account that there may encounter great heterogeneity in the types and number of these components?</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer 1: Lawrence Mbuagbaw

1. Under methods please update the section on registration. I believe the protocol is now registered. This has been updated accordingly under methods and design in both the abstract and body text.

2. Under types of intervention: "person needing a vaccination" is very vague. Provide more details as to who would be included and what kind of vaccines. Some vaccines are compulsory others are recommended.

Thanks for pointing this out. The text has been amended under the methods section to provide more detail as to who the participants and interventions are as follows:

#### Types of participants

Participants will be caregivers of infants or children, adolescents and adults including pregnant women drawn from any setting, community-based or otherwise.

#### Types of interventions

We will include interventions in which mobile phone text messages serve as a reminder to be vaccinated, as educational information or, as information regarding vaccine availability at the clinic in an attempt to promote uptake of vaccinations. Vaccinations could include routine infant immunisations, those against human papilloma virus, influenza, meningococcal (MCV4) or tetanus/diphtheria/acellular pertussis (Tdap).

3. Secondary outcomes:

Consider other outcomes related to the process. For example, scheduled appointments for vaccination or vaccination records etc.

The text has been amended to reflect this suggestion as follows:

Secondary outcomes: Secondary outcomes are the recall rate in persons who had previously missed their vaccinations, scheduled appointments for vaccination or completeness of vaccination records.

#### 4. Search strategy:

Specify time limits for data base and conference searches.

The section "Search methods for identification of studies" has been amended to indicate the dates for searching the databases and conference proceedings indicated below. The date has also been revised.

A comprehensive and exhaustive search of databases and conference proceedings will be performed by RK with the help of the University of Cape Town librarian, to identify all relevant studies available by 30 June 2014, regardless of language or publication status. We will search both peer-reviewed journal articles and grey literature (unpublished, internal or non-reviewed papers and reports).

#### 5. Measures of treatment effect:

How will you deal with outcomes measured on a different scale.

Describe the measure of variability for the mean difference.

Text amended to reflect the suggestions:

#### Measures of treatment effect

We will calculate risk ratios and their corresponding 95% confidence intervals and P-values for dichotomous outcomes, and mean differences and standard deviations for continuous outcomes.

Where outcomes are measured using different scales, we will report Standardised Mean Differences (SMD).

#### 6. Data synthesis:

Reference the I squared statistics. Done

Some of the proposed subgroups are not relevant to immunization. e.g daily reminders.

While this may be indeed be true, we nevertheless wish to maintain this subgroup analysis so as to tease out the value of the frequency of the reminder in and of itself, especially wince this may impact on other diseases for which SMS reminders could be a consideration.

Overall well written with minor issues and precision to address.

Thank you for this comment. Much appreciated.

Reviewer 2: Pierre Verger

The subject of this systematic review protocol is both interesting and important. The protocol is presented in a very clear, detailed and precise way. It is based on international standards.

We thank Dr Verger for his positive comments and support for this work.

#### Specific points:

1) Vaccine coverage operational definition: vaccine coverage can be estimated by different methods (based on vaccine documents, on subjects' declarations, or also on health insurance reimbursement data...);

Primary outcomes:

The primary outcome is vaccination coverage, irrespective of disease. We will use the definition of vaccine coverage as stipulated by the respective authors.

..this might have an impact on the evaluation of interventions: how will the authors deal with this?

The section relating to “Data synthesis, assessment/investigation of heterogeneity” has been amended to address this concern

We will also conduct a subgroup comparison of self-reported vaccination completion versus verified clinic records...

2) Intervention impact may depend on the context (cultural, sociological and economical) of the targeted country, population, territory... Again, how will the authors take this aspect into account in their review and analysis?

We will include the contextual aspects in the data extraction form, for consideration as potential subgroup analysis.

3) Participants of the revised studies will be adults, children or their caregivers; will adolescents be excluded from the review? If yes, why?

Thanks for pointing this out. The text has been amended to include adolescents:

Types of participants

Participants will be caregivers of infants or children, adolescents and adults including pregnant women drawn from any setting, community-based or otherwise.

4) Acceptability of vaccines and –we hypothesize- interventions’ impacts may greatly differ according to targeted groups (adults/children/adolescents) and also the type of vaccine: how could this be dealt with in the analysis, especially if the number of published studies included in the review process is not important enough to allow for multiple stratifications?

In addition to analysis of the uptake of vaccination in all included studies, we intend to conduct analyses according to age categories and country setting. The text has been amended as follows under “Data synthesis, assessment/investigation of heterogeneity”

We will also conduct a subgroup comparison of self-reported vaccination completion versus verified clinic records as well as according to age categories and country setting.

5) Intervention scales may be very heterogeneous so that results at country level or district or municipality level will not have the same weight; a sentence regarding this specific problem should be added in paragraph “Data synthesis, assessment...”)

This has been addressed under the fifth comment of reviewer No 1 above.

6) In the same paragraph, the authors explain that they will stratify their analysis on intervention type: regarding interventions with multiple components how will the authors proceed to take into account that there may encounter great heterogeneity in the types and number of these components?

Where heterogeneity is found, we will attempt to explore possible reasons for this findings. Alternatively, we will report our findings as a narrative summary. The text has been amended as follows under "Data synthesis, assessment/investigation of heterogeneity"

Should heterogeneity remain significant, we will discuss the findings as a narrative summary.

As mentioned by Dr Verger, we feel that this paper will make an interesting and important contribution to the literature. Thank you for your consideration.