Author's response to reviews

Title: Barriers and enablers to delivery of the Healthy Kids Check: An analysis informed by the Theoretical Domains Framework and COM-B model

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Author's response to reviews: see over
Dear Professor Kent,

Thank you for the opportunity to resubmit our revised manuscript entitled:

**Barriers and enablers to delivery of the Healthy Kids Check: An analysis informed by the Theoretical Domains Framework and COM-B model**

We believe that we have fully addressed the reviewer’s comments, thereby strengthening the paper, for which we would like to thank the reviewers. In particular, we have revised the background section to clarify the Australian context and addressed the issue of sampling with discussion as to how this may relate to delivery of the HKC. We have also streamlined the results section and corresponding Table 3. to reflect the framework headings on which the study is based. We have also remained cognisant of the word limits assigned to research articles.

Please find attached the revised manuscript and tables. (Figure 1 and Boxes 1-3 attached separately)

In the following we reply to the comments, point by point, according to the different sections of the manuscript, with additional content in italics.
BACKGROUND

Reviewer 1.
Qn 1. And 1e.
This research is not designing an intervention, but as is stated in the abstract it is to ‘inform’ rather than design.

A: This has been amended:
“Utilising the TDF and COM-B, the aims of the present study were to determine the barriers and enablers to delivery of the HKC, and to inform the design of an intervention to promote provision of HKC services, in Australian general practice.”

Qn1a.
I remain a little unclear from the introduction to the roles of different healthcare providers in the provision of healthy children checks. Is this a competitive market, are only general practice provider healthcare checks for this age group, or are they competing with MCHNs and does general practice do any younger age checks?

A: Paragraphs 2 and 3 have been restructured to explain Australia’s current system in terms of the barriers to preventive healthcare for young children:
“Although a review of the evidence for child health surveillance has found little evidence for effectiveness (principally due to a lack of clinical guidelines) the report concluded that there was a need to rethink how child surveillance was conducted [7]. Australia has a system of publically funded child health surveillance visits provided by Maternal and Child Health Nurses (MCHN) through local government. Delivery of services varies considerably state-wide, but in the state of Victoria - where this study was conducted- services engage more than 90 per cent of families in a child’s first year. However, contact diminishes as the child gets older, so that by 3½ years of age less than 60 per cent of children complete health surveillance visits [8]. In contrast, general practice services are delivered from predominantly privately owned clinics. Rebates for services-inclusive of some preventive health assessments- are available from the national insurer ‘Medicare’ with the intent to secure universal access to subsidised primary care services. Consequently, more than 80 per cent of the Australian population visit a general practitioner (GP) each year.[9]

To increase opportunities for preventive health with young children, in 2008 “The Healthy Kids Check” (HKC) [10], a one-off health assessment aimed at preschool children, was introduced into general practice, where 12 per cent of GP-patient contacts are with children [11].

Qn 1b.
It is stated ‘there are considerable gains to be made through these initiatives’ – but there is no evidence presented to support this. Is there clear evidence for the HKC?
A: This sentence has been re-written as: *These initiatives seek to improve health in early childhood,* for despite Australia having one of the highest life expectancies world-wide, under-5 morbidity and mortality remains disproportionately high. (Line 6, paragraph 1, page 4)

In addition, an explanatory sentence has been included in the paragraph immediately following the statement and includes a new reference:

“Although a review of the evidence for child health surveillance has found little evidence for effectiveness (principally due to a lack of clinical guidelines) the report concluded that there was a need to rethink how child surveillance was conducted [7].” (Paragraph 2)

Our own review of the HKC (Reference 35) also indicated low levels of evidence for the components of the HKC and this is referred to in the discussion section (Paragraph 2, page 17)

“Expressions of low confidence with the evidence behind the HKC, ambivalence towards outcomes and confusion as to why it had been introduced in the first place, explained some of the reluctance of GPs to implement the HKC. Much criticism has been levelled at the low levels of evidence for some of the existing components of the HKC [35]”

Qn 1c. “The state of Victoria ranked sixth out of seven states in terms of HKC checks”

A: This has been clarified as

“The state of Victoria ranked sixth out of seven states in terms of *proportions of children receiving HKC services in 2012*” (Line 4, paragraph 1, page 5)

Qn1.d

The statement “behavioural change among parents and different health care providers is required” – feels a little simplistic.

A: This has been changed to:

“*Therefore, for an increase in HKC services to occur, the behaviour change processes of several interacting groups of people, including parents and healthcare providers, operating at various organisational levels, needs to be considered.*” (Paragraph 3, page 5)

Reviewer 2.

In the penultimate paragraph of the Background, where Figure 1 is introduced, it reads “The 12 domains of the TDF can be condensed…”, yet only 11 of the domains are included in Figure 1. Please explain at this point why only 11[of the 12] domains are included. This is explained in the final paragraph of the Methods section – perhaps move the final two sentences from that paragraph to here?
A: Thank-you for pointing out this discrepancy. Figure 1. Has been adjusted accordingly to explain the “omission” with the statement:

“Nature of behaviours not considered a source of behaviour (see text for details) and therefore removed from the analysis”

The explanation for the exclusion is retained in the methods section as it was “exposed” as clearly not being a source of behaviour, but rather, a descriptor, during the analysis phase, when COM-B was applied.

“The domain ‘Nature of behaviours’, part of the original list of domains within the Framework, could not be assigned to the COM-B model because whilst it described context (current practice) it did not provide a source of behaviour. This domain was subsequently removed in a review of the Framework which tested its validity with a second group of behavioural change experts” (Line 8, paragraph 2, page 8)

METHODS

Reviewer 2 requests more detail within the Methods section. This has been revised to answer points 2-5 and question 7. Box 3 has been inserted which describes the characteristics of the sample, although no formal demographics were obtained at the time of the focus group.

2. Did participants provide written informed consent? If not, why not?

A: A statement has been added:

“Ethics approval was obtained from Monash University and all participants provided written informed consent.” (End paragraph 2, page 7)

3. Who facilitated the focus groups? What were their backgrounds (e.g. were they clinicians or not clinicians?) and

4. What was the duration of the focus groups?

A: A statement has been added:

Focus groups took place between June and October 2011 (3 years following introduction of the HKC), lasted approximately ninety minutes and were facilitated by the first two authors (who declared their positions) one a GP, trained in qualitative research methods, the other, an experienced qualitative researcher. (Line 9, paragraph 2, page 7)

5. How many participants were there in each focus group? I assume there were separate focus groups for GPs and PNs in each area, but please clarify.

A: see Box 3
Box 3. Focus groups according to practitioner and area

<table>
<thead>
<tr>
<th>Name and description of area of Melbourne</th>
<th>Participant numbers in GP focus groups (Total =22)</th>
<th>Participant numbers in practice nurse focus groups (Total =18) (all female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayside Upper socio-economic</td>
<td>6 (3 female 3 male)</td>
<td>6</td>
</tr>
<tr>
<td>Dandenong Lower socio-economic Culturally and linguistically diverse</td>
<td>9 + 1 practice nurse (6 female 4 male)</td>
<td>6</td>
</tr>
<tr>
<td>Westgate Lower socio-economic</td>
<td>7 (4 female 3 male)</td>
<td>5</td>
</tr>
</tbody>
</table>

6. Did participants know each other?

A: As explained in the methods section participants were allowed to nominate other practitioners (snowballing) but only one practitioner from each clinic was invited. (Paragraph 1 page 7): “participants could recommend other practitioners (snowballing), with a limit of one GP and one PN from each clinic.” (Line 3, paragraph 1, page 7)

7. Were the transcripts returned to participants for correction/comment; did participants provide feedback on findings;

A: A statement has been added:

“A report was emailed to each participant to solicit feedback.” (Line 16, paragraph 2 page 7)

And

“Moreover, feedback, solicited from participants, did not amend the study’s findings.” (End paragraph 1 page 20)

7. (continued) And (how) did this influence participants’ responses? If data were analysed by different people to the facilitators, what were their backgrounds and potential biases/assumptions and how might this have influenced the data analysis and interpretation?

A: A statement has been added in the “study limitations” section, to provide further clarity on this point:

“The TDF was originally designed to be accessible and useful to an interdisciplinary audience to understand behaviours around evidence based guidelines. The researchers had a combined wealth of experience in general practice, preventive care and qualitative research methods but did not have access to the skills of a behavioural psychologist. Had we had such access, further insights may have been generated, but in this way we have adhered to the original intent of the TDF.” (Paragraph 3, page 19)
RESULTS

Both reviewers pointed out inconsistencies in labelling. We thank the reviewers for suggesting that sections should align with the TDF framework.

A: The whole document has been reviewed so that labels between tables and text are consistent and in line with the TDF framework, and we believe this streamlines both the text and reading of the tables. (This also addresses point 9 raised by reviewer 2.)

In addition:
Review 1

5a. I am struggling to match the heading ‘behavioural regulation’ with the text which is about practitioners wanting standardisation of processes. While I can see that does then lead to behavioural regulation, the initial issue really seems to be standardisation of approach which will then to lead on to this. I would reword this or change the heading to more usefully reflect the content.

A: The heading “Behavioural Regulation” has been retained for consistency. However, the links between behavioural regulation and standardisation of approach have been re-worded to make this more explicit:

“Practitioners perceived that there could be a wide variability in the quality of HKCs and thought they should be standardised for greater consistency across practices and between practitioners. Participants compared the structure of primary healthcare in Australia, the UK and New Zealand: they believed that the fact that individual practices were not held to account for the public health of a local population called for greater regulation of clinical behaviours.” (Page 9)

5b. Under the heading of general practitioners I think for ease for the reader it would be useful to separate and define each theme that has been identified

A: This section has been reviewed and divided into subsections according to the TDF and then again according to practitioner. Table 3 has been adjusted accordingly. This has also addressed the point raised in 5d.

5c. Page 12, first paragraph under General Practitioners. The first sentence and the second sentence are covering two different issues. The first sentence around GPs considering this as a safety net. The second sentence is a different issue and is about GPs questioning their role and place in childhood surveillance which is an important theme and different from the first issue. I suggest they are defined separately. Also I would like clarify as to whether this was a theme from
the majority of the GPs or an occasional GP as this would make a difference to interpreting this finding.

A: We would contend that the two issues are bound up in the perceptions most GPs held around their own professional role and identity. In trying to understand the reasons HKCs had been introduced into general practice they placed the task of child health surveillance firmly in the domain of MCHNs. They failed to see that they had a significant role in assessing child development in their day-to-day interactions with children, and viewed the HKC as a last chance to uncover problems before the start of school, where a parent may have missed appointments with the MCHN. As indicated in the following paragraph this was the view taken by the majority. Only two (out of 22) GPs were routinely using HKCs and held quite different views about child health surveillance. (Line 17, paragraph 3, page 14)

“Two GPs (one a GP in Bayside, the other in Westgate focus group), who had additional qualifications in paediatrics, sought children from vaccination consultations to opportunistically conduct developmental assessments or HKCs,”

Reviewer 2.

8. What were the characteristics of the sample, e.g. age, gender, experience/number of years as a practicing clinician etc.?

A: The demographics of the participants were not gathered for this study as this was an exploratory qualitative study and did not plan to analyse the findings according to practitioner characteristics. However, the inclusion of Box 3 details the sex distribution of the participants.

9. (See first point in RESULTS section regarding labelling of results section)

10. Results, Practice Nurses section, paragraph 3 states that 36/40 practitioners were slow to embrace HKCs – where did this number come from? Were quantitative methods/data used, and if so please explain in the Methods section.

A: This has been removed from the results section because, as the Reviewer indicates, it is more suited to quantitative analysis and was information surmised from participant responses but not gathered directly from them.

11. Did any codes/themes emerge during analysis which couldn’t be mapped to the domains of the TDF?

A: No. An additional clarifying statement is made in the Methods section (Paragraph 2, page 8):

“All codes could be applied to at least one domain.”
12. The numbering of the tables was incorrect and has been amended, thank-you.

13. In the table currently named Table 2, Motivation-Automatic in the third column – does this link to the beliefs about consequences theme in the second column? In Figure 1 it is associated only with the emotion domain of the TDF, but as explained in the text no data were matched to this domain; so should Motivation-Automatic be removed from the Table?

A: The Table does not contain the label Motivation - Automatic. The Reviewer correctly recalled from the text that there was no data within the domain ‘Emotion’ which is the only Automatic Motivation contained in COM-B. This has been clarified following adjustment of the headings and subheadings to reflect the TDF and retain consistency across the paper.

14 Were there any notable differences in responses between the three groups of PNs/GPs?

A: This is an excellent question and some extra commentary has been added in the opening statements of the Discussion section which refer to the three socio-economically diverse areas of the study:

“Despite the fact that our sample populations were sourced from three very diverse socioeconomic backgrounds we found that within each focus group, participants described a range of experiences from practices well established with delivering HKCs and others just venturing out with service delivery. All focus groups expressed approval for fiscal-type interventions that maximised participation from population groups likely to be more vulnerable, and all groups discussed the likelihood that HKCs may duplicate services offered by MCHNs.” (Line 3, page 16)

In terms of our analysis the only notable difference was that both of the nurses, who had independently established HKC clinics, were from the Dandenong group which arguably had the greatest need amongst its population. Not only is this area of low socioeconomic status, but it has a large recent migrant population and therefore is highly culturally and linguistically diverse (CALD). Accordingly a sentence has been incorporated which reflects this, in the results section (Top of page 15) which is picked up in the discussion:

“Of interest was the fact that both of these PNs participated in the focus group in the Dandenong region, an area which serves a large migrant population of low socio-economic status.”

“Although small in number, two PNs had established specific HKC-clinics in an area that has rates of developmental vulnerability almost twice the state average [6], indicating they may have responded to increased need in their populations.” (Line 9, paragraph 1, Page 16)

However, the fact this was a qualitative study precludes further quantitative analysis due to the small numbers involved.
DISCUSSION

Reviewer 1.

5 e. Discussion page 15 – a small question in the first paragraph where the authors discuss the practitioners ‘beliefs’ – once again beliefs is also often founded on systematic issues as to how the system is currently functioning, not just a belief of an individual provider.

A: We hope that this has been adequately addressed in the revision of the introduction.

5 f. Discussion paragraph 2 – in this paragraph the authors raise the possibility of a duel health professional role combining GP and PN – while this is an interesting concept it clearly would also raise resourcing issues and I have not yet seen a working model along this line for this particular service. I believe the discussion here would benefit from a bit more international literature and discussion around roles in service delivery with the provision of preventive child health checks.

A: Thank-you. We have clarified that shared input into consultations is already well established in Australian general practice, and extrapolated to indicate that this fits with international models of team based care:

"Apportioned roles are already a part of Australian general practice where practice nurses assist a supervising GP with aged care health assessments and chronic disease management, using a team-based model of care. This also fits with international processes, outside of the US, where child health surveillance is a divided responsibility between different professionals" (Line 2, Page 17)

5 g. Page 16 discussion paragraph 2. Generally preventive child health checks are not seen as single one offs but part of a continuum of preventive child care checks at different ages in development, rather than a focus here on a single ‘check’ the authors may benefit from considering how the Australia 4 year old HKC can fit into the continuum of checks for children from infancy in a programme and how that affects the roles of different providers, in this context MCHNs and general practice staff.(also see point 15. from Reviewer 2)

A: This has been addressed in the discussion on page 17 (third paragraph) which has been modified to emphasise current thinking in terms of child surveillance. However, the scope of this paper does not allow for full discussion of the pros and cons of such flexible delivery models here:

"Findings in relation to the opportunities afforded by the broader social environment, indicate key connections between immunisation services and delivery of HKCs. Delivery of a HKC at an earlier age would give more time to intervene early in a child’s development, but primary vaccinations are complete by 18 months, an age too soon for accurate assessment of all aspects of a child’s development. Alternatively, instead of a single health assessment, additional developmental assessments, not tied to vaccination time-points, could be funded to take place in general practice, in keeping with recommendations for a continuous
process of child surveillance. Annual assessments, for example, would provide alternative surveillance opportunities where families have prematurely disengaged from MCHN services, although this could risk duplicating services. Alternatively, the co-location of MCHN services within general practice may encourage opportunities for child surveillance in some communities where access is limited [42]. Having a flexible delivery-model for child health prevention is likely to be welcomed by families juggling the demands of child-rearing when both parents work, for example, and may help to overcome the barrier of birth order (subsequent children less likely than first-borns to receive MCHN services) we identified in a parallel parent study [17]. Flexible service delivery models were also one factor which contributed to increasing vaccination rates from 53 to more than 90 per cent in the 1990’s [43]. In addition, this would send a strong message about the importance of early intervention to both parents and practitioners, with the potential for general practice to significantly contribute towards developmental surveillance.” (Paragraph 3, Page 17)

5h. Page 17 paragraph 2. I believe there is more international literature around models of care in preventive child health services, not just in primary mental health and it would be add extra to add in more to this discussion around models of care.

A: Thank-you for this recommendation. “International models of care” has been addressed in point numbered 5f. and in paragraph 1 on page 19 which discusses how the barriers from this study fit with those identified by physicians in the US. In addition the reference to primary mental health care was centred on opportunities for professional development rather than models of care. This paragraph has been clarified:

“The fact that the HKC had acted as a ‘catalyst’ to professional development amongst some PNs and GPs suggests that some practitioners were poised to take on an extended role in paediatric healthcare. In addition, several GPs and PNs appeared amenable to practising more preventive healthcare and working alongside childhood educators and MCHNs. Primary care organisations could provide the support for networks of professionals, from different disciplines in child preventive healthcare, to develop expertise, share information and build overall capacity. As well as increasing opportunities for collaborative care this would also strengthen referral pathways. Precedent exists as similar collaborations have been successfully implemented across disciplines in Australian primary mental health care [45] with minimal central funding and ongoing voluntary commitment from a broad array of practitioners.” (Paragraph 3, Page 18)

Reviewer 2

15. Discussion, paragraph 3 – suggests that annual assessments to the age of 5 would provide alternative surveillance opportunities: please indicate whether/how this suggestion has arisen from the data or elsewhere, and comment on the potential negative impacts of this strategy.

A: Annual assessments similar to the MCHN schedule are proposed for the situation where a family has disengaged from MCH services. This would provide a flexible delivery model of child
surveillance to families, similar to that proposed by the National Immunisation Strategy for Australia in 1993. We hope that the paragraph above has clarified how this suggestion has arisen.

16. It would be interesting to compare these findings to data from parents themselves, particularly because some of the clinicians’ attitudes relate to how they perceive parents would react to the check, e.g. concerns that they risk antagonising parents. How do these findings fit with your previous publication regarding parents’ decision-making and access to preventive healthcare (Health Expectations, 2013)? Can you comment on whether you have any plans to include parents in future phases of this research?

A: An excellent suggestion. This will be the focus of further analysis and is beyond the scope of this paper. The findings, inclusive of the parent study, will be incorporated into the design of the intervention and additional sentences have been incorporated into the discussion section (as above- page 17, third paragraph) and the concluding statements.

“Having a flexible delivery-model for child health prevention is likely to be welcomed by families juggling the demands of child-rearing when both parents work, for example, and may help to overcome the barrier of birth order (subsequent children less likely than first-borns to receive MCHN services) we identified in a parallel parent study [17].” (Line 4, Paragraph 1, Page 18)

The design and mode of delivery of this complex intervention will combine the findings from previous research with parents [17] and discussion with a group of stakeholder, prior to piloting and further testing in general practice. (Line 7, paragraph 1, Page 21)

Discretionary 1. See response to BACKGROUND 1c.

Discretionary 2. The Table “Prompts for Focus Groups” has been included in the main file (Table 1.) as suggested by the Reviewer.

We hope that our manuscript is now acceptable for publication and look forward to your response.

Yours sincerely,

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