Reviewer's report

Title: Using logic model methods in systematic review synthesis: describing complex pathways in referral management interventions.

Version: 2

Date: 15 February 2014

Reviewer: Patricia Rogers

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This is a useful contribution to an important issue in evidence synthesis - making sense of evidence about complex interventions which operate in different ways. The design and description of the iterative searching process is useful. The classification system for diverse types of evidence demonstrates a practical way to include good quality evidence across different designs.

However, while the logic model provides an overall map of the different ways that these types of programmes might work, it does not provide a coherent explanation of how these work.

Although the paper cites other approaches to synthesis of diverse evidence, in particular Pawson's Realist Synthesis, the methodology does not appear to have learned from these approaches. As a result, the paper, and the synthesis it describes, is less useful than it could have been. Specific recommendations are made below.

Major compulsory revisions

1. The logic model requires some revision to provide a coherent explanation of how these programmes are understood to work. A logic model needs to be able to be read as a logical narrative. In its current form this is not possible. Three types of revision are needed.

   Firstly, the mediators and moderators should not be shown as coming between the short term outcomes and the demand management outcomes, as they do not always mediate demand management outcomes. Some of these appear to mediate or moderate short term outcomes (for example, GP time pressure) and some to mediate or moderate impacts (for example, availability of specialist). An alternative would be to list them below the logic model and to indicate which link in the model they relate to.

   Secondly, the wording of the outcomes and impacts need to clearly indicate the results of the programme. For example, "attendance rate" would be better framed as "increased attendance rate" and the box "waiting times" needs to be explained.

   Thirdly, some of the labels in the logic model need revision for clarity. It is not clear how "patient satisfaction" and "referrer satisfaction" fit into the logic model.
Is patient satisfaction simply an indicator of improved service delivery or is an important intermediate outcome which increases the likelihood of attendance at the referred practitioner? Does "adequate referral information provided!" refer to the information the patient provides to the GP, or the GP to the patient or the GP to the specialist?

2. While this paper is not focused on the results of the synthesis, it would be helpful to provide a brief summary of it in narrative form and to revise the logic model to reflect this. This would require getting to the heart of how these programmes are understood, and being clear about the problems they are designed to address, which the paper and the logic model do not make clear. Is the problem that GPs over-refer? under-refer? refer inappropriately? do not provide sufficient information when they refer? Is the problem that patients do not follow through on referrals?

Providing some examples of programmes in terms of the logic model, running from the beginning to the end, would be helpful. Pawson's approach to realist synthesis, which is cited as a reference, provides examples of the utility of doing this.

Minor essential revisions

1. There seems to be a discrepancy in the grading of evidence as described in the text and as shown in the diagram. The text refers to a single group for "no evidence" and "varied evidence", whereas the figure shows these as separate - which is more appropriate. Areas where the evidence is varied warrant further investigation of patterns in the variation - for example contextual factors associated with different outcomes which could be explained theoretically. This discrepancy should be corrected.

Discretionary Revisions

1. The paper refers to the short-term outcomes as "mechanisms of change". I would caution against this label as "mechanisms" is well established in realist evaluation and synthesis to refer to the combination of reasoning and resources to change decisionmaking. Even in other approaches to logic models and theories of change, causal mechanisms occur at each link in the causal chain, not only at one level.

Level of interest: An article of importance in its field

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.