Reviewer's report

Title: Advancing the application of systems thinking in health: A realist evaluation of a capacity building programme for district managers

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Reviewer: Jens Byskov

Reviewer's report:

This paper is a much needed contribution to mixed methods approaches by clarifying their added validity for identifying the important project specific factors for the degree achievement their outcome objectives. It therefore also addresses the issues of attribution of outcomes by focusing on context, processes and output and the way that these are most likely to have influenced the desired outcomes. In the common epidemiologically argued outcome and impact expectations based on statistical significance the change commonly miss these factors and lead to varying conclusions in studies and thus to inadequate guidance to decision makers and the public. The other point is that the increased focus on context and process is necessary as the output is or should be within project control while the outcome commonly is not. Without such insight simplistically cause-effect based interventions commonly go very wrong, crowd out other action or are not sustainable.

The realist evaluation is therefore strengthening the bridge between science and its appropriate use to define practice of evaluation. A next stage could be the further development of realist priority setting and planning. It seems associated to Logical Framework thinking (also the steps prior to the tabular framework). Contrary to that the realist evaluation requires a much more flexible kind of explicit incremental opportunism approach.

Thus the paper is important and questions well defined. The chosen example and the methods are relevant. It is a scientific paper and the methods applied well conceptualized, but may need to be further simplified to be managerially practiced in internal and external evaluations by managers and consultants. The limitations are need for further development of concepts and methods are clearly stated at the end.

Major compulsory revisions:

The paper must clarify whether outcomes such as still birth rates are facility based, community based or both and the consequences of differences in the chosen sites.

Make more clear that putting people up front as the most important outcome improvement factor is a choice and not a new “paradigm”.

Describe how the capacity building and training needs were defined and the people centred approach chosen. This is because of the web of causation where
capacities of people is just one of the causes and may not change anything before organisational capacities are improved e.g. drugs and financing on time.

P4 para 2 states that people and not programs change things. However, effects of programs are mentioned in the same para.

Describe more explicitly any dangers in relying mainly on two outliers. How were outlier criteria decided and does that result in a dependency bias for other criteria?

P14 Not sure that I get the table right. The unshaded area follows a shaded one and seems to be evaluation indicators, but not all content in columns seems to correspond to overall column headings. The second shaded area is not followed by an unshaded one. Definition of rows needed.

Minor essential revisions
Training needs must surely address desired capacities of e.g. staff, but what about the real people i.e. the civil society and the population. Were their knowledge needs addressed?

The requirement for a defining a new theory may not be locally understood. How to go to scale?

Are outcome measures attributable to the capacity building or is it really to the output and intermediate changes in management and services. Other research of more single intervention efficacy nature which show what works conditions be the main support why and output (short term and under control) is beneficial even if a direct outcome (long term and complex causation not controlled) is not possible to attribute to the program.

Discretionary revisions.

P4 para 3. individual, teams, organisational and health system. Or Individual, groups, service organisations and and the health system (CSOs and communities)?

Systems are complex and so are many of the figures. I takes some time to interpret them, so the main focus might be further shown in the figure or the text or some detail be merged.

It would be nice to have some discussion on the way to make other evaluators and actual managers use the tools at probably two levels of sophistication. Also how in future priority setting and planning may build on the same principles of factoring in adaptation to context and the main process guidance.

**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