Reviewer’s report

Title: The SPARK tool for prioritizing questions for systematic reviews in health policy and systems research: development and initial validation

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Reviewer: Stephen Hanney

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The SPARK tool for prioritizing questions for systematic reviews in health policy and systems research: development and initial validation

This paper from a highly experienced team provides a generally clear account of an initiative that could be potentially important in helping to ensure scare research funds are spent in the most effective way. There are a small number of points that would benefit from some further attention.

1. The background includes a fairly comprehensive account of the relevant literature. There are, however, a few more papers that could be useful to reference, for various reasons. For example, Viergever et al. provide what has become a key checklist for health research priority setting: Viergever et al. Health Research Policy and Systems 2010, 8:36

http://www.health-policy-systems.com/content/8/1/36 It might be worth including it, even though I note you do reference the recent application of it by Mador et al (your reference 16). Bryant et al in their 2014 paper 'Health research priority setting in selected high income countries: a narrative review of methods used and recommendations for future practice' use the term 'vignette' to describe the brief background paper that can be used to provide information to those answering prioritisation questions. Perhaps this term might usefully be applied to some of the preparation material described on p.15 of your paper? Bryant et al. Cost Effectiveness and Resource Allocation 2014, 12:23

https://resource-allocation.biomedcentral.com/articles/10.1186/1478-7547-12-23

2. Then there are a couple of papers published since your article was submitted that might add some additional relevant perspectives.

* First, Moore et al asked: 'Does knowledge brokering improve the quality of rapid review proposals? A before and after study' Moore et al. Systematic Reviews (2017) 6:23 DOI 10.1186/s13643-017-0411-0

* Second, a recent publication highlights the importance attached by the UK’s National Institute for Health Research (NIHR) to both collaborative priority setting and the role of
systematic reviews. The evidence is described in the Supplementary web appendix to a Letter in the Lancet in which Nasser et al explore what different research funders are doing to minimise waste in research (ie related to issues highlighted by Chalmers et al, 2014 that you include as reference 31). This letter might be important because it shows the NIHR both involve various groups in priority setting, and state that any new research requires systematic reviews of existing evidence. Nasser et al. What are funders doing to minimise waste in research? Lancet. 2017 Mar 11;389(10073):1006-1007. doi: 10.1016/S0140-6736(17)30657-8.

3. It would be helpful to include the years searched in your literature review described on p.7.

4. There appears to be a small contradiction in the account of the number of people engaged in the activities of Group 1 of Step 3. In the Methods on p.8 the text states: ‘we shared the draft tool with six international experts…..’; in the Results on p.10 you state: 'Group 1 involved four participants'.

5. While you correctly acknowledge that 'the tool could benefit from additional real-life testing in different contexts to enhance its generalizability' (p.16), I think there needs to a somewhat more explicit acknowledgement of the limitations. For example, it appears that just three policymakers were involved in the pilot testing. Additional pilot testing would probably have been useful because there are a few questions that currently do not seem to be well-phrased or provide an entirely appropriate definition related to HPSR (eg, Module 1, question 1), and others that some might view as controversial and potentially not appropriate for a prioritisation exercise (eg, Module 1, question 7; Module 2, question 8). Perhaps the account of the limitations could identify areas that might benefit in particular from additional real-life testing.

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