PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Implementation and impact of an online tool used in primary care to improve access to financial benefits for patients: A study protocol
AUTHORS	Aery, Anjana; Rucchetto, Anne; Singer, Alexander; Halas, Gayle; Bloch, Gary; Goel, Ritika; Raza, Danyaal; Upshur, Ross E.G; Bellaire, Jackie; Katz, Alan; Pinto, Andrew

VERSION 1 – REVIEW

REVIEWER	Ezra Golberstein Associate Professor University of Minnesota School of Public Health USA
REVIEW RETURNED	05-Feb-2017

GENERAL COMMENTS	One high-level question is, why is this this framed as an income security screening tool? If the main output of the tool is telling people that they are eligible for benefits and maybe giving them information on accessing those benefits, why not have benefits themselves be the focus of the tool. After all, what do you expect the tool and/or health professionals to do to improve income security, aside from working through benefits? A second is that I am surprised that the primary and secondary outcomes do not include the survey data from providers on the feasibility and acceptability of the tool. This struck me as odd, considering that this is one of the first research questions posed in the abstract and manuscript, and this is defined as the “primary aim” of the study. My third major comment is more around the study design. What is the purpose of looking for changes in the patient-reported outcomes over a 1-month period? By doing this, the “baseline” of those changes is measured *after* the online tool is used and resource information is presumably received by the patient. It would make so much more sense to measure knowledge *before* the patient uses the tool. In fact, it would not be surprising if you actually see declines in patient knowledge over the 1-month period, not because the tool is ineffective, but because the “baseline” measure is artificially high since information was just received. Is there a way you could collect information from patients before the tool is used? **Smaller, editorial comments** The first sentence of the manuscript is redundant, you could rewrite it. The 4th sentence of the manuscript is far from obvious. Why should the health sector intervene around the SDOH? Second paragraph, 1st sentence. This is not quite correct. There are many, many rigorously evaluated interventions that aim to improve

	income security. They may not have been formally framed as "SDOH," but that is implicitly what they are, according to the SDOH framework. This is an important distinction to make.

REVIEWER	Georgy Kopanitsa Tomsk Polytechnic University, Russian Federation
REVIEW RETURNED	05-Apr-2017

GENERAL COMMENTS	A very solid and reliable research. I would hardly find how it can be further improved

REVIEWER	Victoria Stanhope New York University, USA
REVIEW RETURNED	13-Apr-2017

GENERAL COMMENTS	This paper presents a protocol to examine the feasibility of implementing an online tool designed to improve the income security of people receiving services in primary care. The study aims to explore whether the tool can be integrated into the provider workflow, how patients respond to the tool and whether the tool has any short term impact on their income. This is a valuable study, given the increased focus on Social Determinants of Health in health care delivery. Overall, the methods are hard to follow – they could be more clearly presented. These are my recommendations for improvement: 1. In Table 1 is it necessary to name the clinics? I would recommend just stating what region there were in to protect confidentiality. 2. The Methods section would benefit from more subheadings. I would suggest having an intervention section describing the tool and how it will be administered. Then a study procedures section, sample section on the clinics and participants – separating providers and patients. I would then separate out quantitative data collection and analysis and qualitative data collection and analysis. 3. More detail on the intervention would be helpful. 4. In the measures section, I would add a table of measures with columns for who completes them, what they are measuring (feasibility, acceptability or effectiveness) and at what time point. 5. Is the advisory group really part of this study? My understanding is that the purpose of the aspect of this study presented in the manuscript is not to modify the tool but to evaluate feasibility and acceptability of the tool. 6. Overall, the distinction between measuring implementation and effectiveness could be clearer – I would characterize the study as a hybrid study as it is combining the two. Has there been a previous efficacy or effectiveness study of the tool? 7. The limitations section should focus on the limitations of the study rather than the tool, itself.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1

1. We thank the Reviewer for questioning the framing of this tool as broadly about “income security”. Improving access to financial benefits is clearly only one component of improving income security. We have changed the wording and framing throughout the manuscript to reflect that the tool is primarily about accessing financial benefits. We have added several parts to the Introduction that emphasize that financial benefits are only one component of income security.

2. The Reviewer points out that the primary and secondary outcomes should include the survey data from providers on the feasibility and acceptability of the tool. We agree this is an important part of the study. The Methods section has been revised to state the primary outcome of the study as the short-term impact on patients and one of the secondary outcomes is provider views on feasibility and acceptability of using the tool. We have also updated the section entitled Qualitative Analysis.

3. The Reviewer raises the issue that by contacting patients at one month following the use of the tool, we may see declines in patient knowledge. The Reviewer makes a strong point that assessing patient’s knowledge of the benefits before using the tool would better indicate their baseline level of knowledge. We have clarified that the we propose to survey patients immediately after using the tool to focus in on their experience of the tool, whereas the one month follow-up is to identify early changes in access to financial benefits. We believe that at one month, most patients will still recall using the tool. We recognize the limitations of choosing one month in the manuscript. Given the pragmatic incorporation of the tool into busy clinic workflow, we believe that adding an assessment of knowledge before using the tool would result in bias in which patients agreed to participate in the study. Our proposed methods allow providers to bring up the use of the tool in their clinical work, and then surveys and follow-up occur subsequently.

4. The Reviewer suggested that the first sentence of the manuscript is redundant. We have edited the first several sentences of the paper.

5. The Reviewer notes that we do not support the assertion that the health sector should intervene on social determinants of health. We have revised this section to include more details on why the health sector should intervene including recommendations from the World Health Organization’s Commission on Social Determinants of Health, the British Medical Association report and a Canadian Medical Association report.

6. We appreciate the comments made by the Reviewer that there are many interventions that aim to improve income security. We have corrected this sentence by clarifying there are currently few rigorously evaluated SDOH interventions within clinical contexts.

Reviewer 2

We appreciate the Reviewer’s positive comments about our paper and this research.

Reviewer 3

We appreciate the Reviewer’s positive comments about the value of this study and have addressed each item raised regarding the Methods, as detailed below.

1. The Reviewer notes that it is not necessary to state the names of the clinics involved in this study. We have edited Table 1 and removed the clinic names to protect confidentiality.

2. The Reviewer suggests that we add subheadings to the Methods section. We have included additional subheadings that separate the intervention section and study procedures section. We have also separated provider and patients in the section on participants and separated the qualitative and quantitative data collection and analysis.

3. The Reviewer recommends we provide more details about the intervention. We have included additional details about the intervention, the role of providers and the role of patients.

4. The Reviewer recommends including “a table of measures with columns for who completes them, what they are measuring (feasibility, acceptability or effectiveness) and at what time point”. We appreciate this suggestion and have added this table.

5. The Reviewer asks “Is the advisory group really part of this study?” Advisory group members play an important role in understanding the perspective of patients and how to improve the tool interface and the tool output which provides recommendations. We clarify the role of the advisory group as it relates to the study.

6. The Reviewer recommends a more clear “distinction between measuring implementation and effectiveness”. We agree with the reviewer’s comments and have clarified that this study is about both effectiveness and implementation. We have accordingly revised the Methods section to clarify this, and have also noted that there has not been a previous efficacy or effectiveness study of the tool.

7. The Reviewer suggests “the limitations section should focus on the limitations of the study rather than the tool, itself”. We agree with this comment and have edited the limitations section to focus on the limits of the study, not the tool itself.

VERSION 2 – REVIEW

REVIEWER	Ezra Golberstein University of Minnesota, USA
REVIEW RETURNED	23-May-2017

GENERAL COMMENTS	This paper is much improved from its original version. However, I still have one major concern, along with two smaller comments. Major concern: I still do not think that the quantitative patient-level analysis around knowledge of benefits will yield useful information. You are delivering the tool, which seems to provide patients with knowledge about benefits. Then, you immediately ask about knowledge of benefits, and use that as the baseline. Then you propose to follow up a month later and ask about knowledge of benefits, to measure changes from baseline to follow-up. Regardless of the true effectiveness of the tool, you are asking about knowledge of something freshly-learned vs being a month old. So, I expect to see declines in the measure, which would be totally unrelated to the tool's effectiveness. I'd recommend not making this outcome a central part of the study, or at least be crystal clear about the limits to what you can learn from this quantitative analysis.

	Smaller issues: 1) Why not look at provider use and discontinuation of the tool, as well? You are proposing rich data collection around provider perceptions and opinions of the tool, but why not look explicitly at their use of the tool? 2) On p. 12, you say that a research coordinator will do interviews with a subset of patient users. How will that subset be selected? Will it be a random sample?

REVIEWER	Victoria Stanhope New York University, USA
REVIEW RETURNED	03-Jun-2017

GENERAL COMMENTS	This was a thorough revision - it is an important study.

VERSION 2 – AUTHOR RESPONSE

Reviewer 1

1. The Reviewer questions the utility of asking participants about their knowledge of financial benefits at baseline and then one month after the intervention, as there could be a decline in knowledge of financial benefits unrelated to the tool's effectiveness. The Reviewer recommends "not making this outcome a central part of the study, or at least be crystal clear about the limits to what you can learn from this quantitative analysis." We have clarified that the primary objective of this study is examining the acceptability and feasibility of the tool in a primary care setting, and its integration into regular clinic workflow and impact on patient awareness and access to benefits. We have edited the manuscript to better articulate that patients' knowledge of benefits is captured during the one month follow up interview, along with feedback about numerous other points regarding their experience using the tool. We also described in greater detail the questions asked in the patient survey to reflect the differences between the brief survey and the interview at one month follow up. In light of Reviewer 1's point, we have also edited our description of the Quantitative Analysis Plan and Table 2 to show that the patients' reported activities and potential change in income are the more central indicators of effectiveness, not patients' knowledge of benefits.

2. Reviewer 1 states "Why not look at provider use and discontinuation of the tool, as well? You are proposing rich data collection around provider perceptions and opinions of the tool, but why not look explicitly at their use of the tool?" We indeed can measure use and discontinuation of the tool and have stated this more clearly. We have also elaborated on the questions and topics explored in the provider survey and provider focus groups, respectively, to reflect that providers will be encouraged to speak openly about their experiences using the online tool, both negative and positive. Data collected from the providers will also include in-depth exploration of barriers to the tool's use.

3. Reviewer 1 states "you say that a research coordinator will do interviews with a subset of patient users. How will that subset be selected? Will it be a random sample?" We have clarified that each patient who uses the tool will be asked if they consent to participate in an interview with a research coordinator four weeks from the day they use the tool. All those who consent to being contacted will be contacted by a research coordinator to complete a briefly interview on the phone. We have clarified that we aim to interview all patients who consent.

Reviewer 3

The Reviewer states, "This was a thorough revision - it is an important study." We appreciate this comment.