Author’s response to reviews

Title: Registration of systematic reviews in PROSPERO: 30,000 records and counting

Authors:

Matthew Page (matthew.page@monash.edu)
Larissa Shamseer (lshamseer@ohri.ca)
Andrea Tricco (triccoa@smh.ca)

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Author’s response to reviews:

Dear editors,

We would like to thank you and the reviewers for their consideration and careful review of our paper entitled “Registration of systematic reviews in PROSPERO: 30,000 records and counting”. We think that these comments and suggestions have been useful and we have incorporated them into our manuscript and given explanations of such revisions.

Below we list the reviewer comments in normal text followed by our responses in bold text.

Reviewer reports:

Reviewer #1: Dear authors,

I write this review on your submitted manuscript as a patient advocate and a consumer on Cochrane SRs. This is a very well written manuscript of great importance, on which I have almost nothing to comment.

Comment #1:

On page 16 (PDF page 17), line 13, it says on forthcoming PROSPERO changes: "(L. Stewart, personal communication)."

Only after reading the acknowledgments section, it becomes clear who this is and thus what this means. Maybe this sentence could be reworded so that it's a bit clearer that you learned from the PROSPERO management that these changes are coming? (And when are they due, do you know that?)
AUTHOR RESPONSE: We have reworded the sentence to, “The PROSPERO management team have advised us that to minimise the potential for redundancy of SRs, forthcoming changes to the user interface will require those registering SRs to consider whether similar SRs already exist, and whether a new SR is necessary (L. Stewart, personal communication).” We are unaware when these changes are due to occur.

Comment #2:

Maybe this is a language issue, as English is my second language, or a matter of taste. Yet, I feel that the wording “cherry-picking” in the conclusions section of both the abstract and the manuscript to have a rather negative connotation. As if there is some form of intent. It is also in a sentence on PDF page 16, line 19-22. But especially in the last sentence of the abstract it comes off a bit strong.

In the manuscript itself the issue of not having pre-specified outcomes (as MECIR C14-18 states "to prevent selective outcome reporting") is more neutrally worded. Such as:

PDF page 5, line 8: "helps minimise potential for reporting bias"

PDF page 6, Line 26: "Complete pre-specification of SR outcomes is necessary to protect against bias due to selective inclusion and reporting of results, where the selection of data to include from studies, and subsequent reporting of results, is influenced by the nature of the findings (16-18)."

So, maybe 'cherry-picking' could be replaced with 'selective reporting', as in: "whether greater pre-specification of outcomes prevents selective reporting of study results" or something to that extent. But like I said, it might be a matter of taste.

AUTHOR RESPONSE: We have revised “cherry-picking” to “selective inclusion and reporting” in the Abstract and Conclusions.

Reviewer #2:

Thank you for the chance to review this interesting article, which describes uptake of the PROSPERO database of protocols of health-related systematic reviews. It is great to see that both registration and access of protocols is increasing rapidly, even without a clear requirement from journal editors. The conclusions are supported by the methodology used, and I recommend the article for publication in Systematic Reviews. The following minor comments are provided for the authors’ consideration.

ABSTRACT:
The first sentence of the Background could be more positive (e.g. 'to improve transparency') and the second sentence could be omitted.

AUTHOR RESPONSE: We have made the first sentence in the Abstract more positive by changing it to, “The International Prospective Register of Systematic Reviews (PROSPERO) was launched in February 2011 to increase transparency of systematic reviews (SRs).” We have retained the second sentence as we believe it provides necessary rationale for the current study.

In the third sentence, the authors could possibly consider replacing the word 'rate' with 'number' as covering both 'per year' and 'cumulative' registrations. Elsewhere in the manuscript, 'registration rate' of SRs could be taken to mean the proportion of systematic reviews that were registered, so perhaps the word 'rate' could be avoided.

AUTHOR RESPONSE: We have replaced “rate” with “number” throughout the manuscript.

In the Methods (and throughout), it would be best to use nouns (e.g. therapy, diagnosis) or adjectives (e.g. therapeutic, diagnostic) throughout.

AUTHOR RESPONSE: We have revised terms so that they are adjective (e.g. therapeutic, diagnostic) throughout.

The Results could talk about 26,535 systematic reviews being registered, rather than records.

AUTHOR RESPONSE: We have changed “records” to “SRs” as suggested.

For the random sample of records, the past tense should be used.

AUTHOR RESPONSE: We have edited the text so that the past tense is used when describing results for the random sample of records.

BACKGROUND

The final sentence of the Background should be referenced or deleted.

AUTHOR RESPONSE: We have included a reference for the final sentence of the opening paragraph of the Background.

Paragraph 2 would tell a clearer story if it started with evidence that a database is needed to minimize publication bias (or at least be able to judge publication rates) and closed with the PRISMA recommendation for such a database to be set up and used.

AUTHOR RESPONSE: We prefer not to modify paragraph 2 of the Background, as we believe that it is more important to describe events in the order in which they occurred (i.e. the publication of PRISMA preceded the 2010 study evaluating selective reporting of outcomes in Cochrane reviews).
Assuming my understanding is correct, paragraph 3 could begin 'The world's first prospective registry of SRs was launched in February 2011. Called PROSPERO, it…'.

AUTHOR RESPONSE: This is correct, so we have revised the first sentence to “The world’s first international prospective register of systematic reviews (PROSPERO) was launched in February 2011 to mitigate these problems with SR transparency”.

It would make sense for the scope to be described before the required fields.

AUTHOR RESPONSE: We have moved information on the scope of PROSPERO before information on the required fields.

METHODS AND RESULTS

The Methods should describe both periods over which the number of SRs registered was collected: 10 Oct 2015-10 Oct 2016, and 10 Oct 2016-10 Oct 2017. Currently, 10 Oct 2016 appears in both periods.

AUTHOR RESPONSE: We have clarified in the Methods section that data on website visits was provided by the PROSPERO database managers for the periods October 10, 2016 to October 10, 2017, and October 10, 2015 to October 9, 2016.

Health area appears to have been classified according to chapter of ICD-10, rather than by individual code as stated in the text.

AUTHOR RESPONSE: This is correct, we classified health areas according to ICD-10 chapters, not individual codes. We have replaced the word “ICD-10 code” with “ICD-10 chapter” throughout.

For the benefit of the general reader, please could page views and visits (and sessions in Figure 2) be defined in the Methods?

AUTHOR RESPONSE: We have defined page views and visits in the Methods section (on page 7). We have removed Figure 2 as we no longer believe it provides essential data for the paper.

Can the statistical method used to calculate risk ratios be specified?

AUTHOR RESPONSE: We have clarified the statistical method used to calculate risk ratios in the last sentence of the Methods section: “Associations were quantified as risk ratios, with 95% confidence intervals (CIs), using a log-binomial regression model.”

The method for extrapolating the number of SRs registered on PROSPERO by the end of 2017 should be described.
AUTHOR RESPONSE: We have noted in the Abstract, Results section (page 9) and Figure 1 legend that projected estimates for year-end 2017 are based on current monthly submission rates.

How was country in Table 1 of the Results defined? It gives similar but not identical results to Country of Corresponding Author for the subset of 150 records in Table 2.

AUTHOR RESPONSE: Country in Table 1 of the results was defined as the country of the corresponding author of the review. We have clarified this in the Methods section (on page 7) and in a footnote to Table 1.

It would be interesting to match location with languages covered by the literature searches.

AUTHOR RESPONSE: We agree that it would be interesting to match location of authors with language covered by the literature searches. However, we decided not to do this since language of literature searches is not a mandatory field in the PROSPERO record, and a look over the 150 records that we studied in detail suggests that few authors specify this information.

Data labels on Figure 1 would be helpful.

AUTHOR RESPONSE: We have added data labels to Figure 1.

In the 150 records studied in detail, was there any evidence of duplicates? If not, is it possible to conclude that PROSPERO is doing its job in reducing duplication, or is (as I suspect) the sample too small?

AUTHOR RESPONSE: There was no evidence of duplicates in the 150 records studied in detail. However, a larger investigation is needed for us to conclude that PROSPERO is doing its job in reducing duplication. As we note at the end of the Discussion, “The PROSPERO management team have advised us that to minimise the potential for redundancy of SRs, forthcoming changes to the user interface will require those registering SRs to consider whether similar SRs already exist, and whether a new SR is necessary”.

DISCUSSION

Can the authors comment on how the geographical or other scope of SRs registered in PROSPERO have changed over time (e.g. by comparing the current data with reference 12)?

AUTHOR RESPONSE: We have included a new paragraph in the Discussion which summarises how the geographical scope of registered SRs has changed over time, by comparing the current data with that in the study by Booth et al., who evaluated the first year of registrations (see page 11-12).

The uptake of PROSPERO is extremely encouraging, and may be driven in part by journals, many of which endorse the PRISMA Statement which encourages SR registration. The results certainly show a strong level of support for the principles of Open Science.
AUTHOR RESPONSE: We agree with the suggestion that the uptake of PROSPERO may be driven in part by journals that endorse the PRISMA Statement, which encourages SR registration in item 5. We have added this possibility to the paragraph in the Discussion on possible reasons for the exponential increase in SR registration (see page 12).

The authors might like to comment on the possibility that registration of systematic reviews could take place after the review has started (or even been completed). More onerous requirements for pre-specification of outcomes could potentially encourage this.

AUTHOR RESPONSE: Authors are allowed to register their SR after the SR has started, and are encouraged to register only after the protocol has been drafted. When submitting the form, authors need to indicate which tasks have already been completed (e.g. preliminary searches, full searches, screening). As stated in the instructions on PROSPERO, “Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. Should evidence of incorrect status and/or completion date being supplied at the time of submission come to light, the content of the PROSPERO record will be removed leaving only the title and named contact details and a statement that inaccuracies in the stage of the review date had been identified.” Given these safeguards put in place, we have decided not to comment on the possibility that registration of SRs may take place after the SR has started (or even been completed).

The fact that 30,000 systematic reviews have been registered is impressive. Can the authors compare the number of systematic reviews registered each year with the number published, to give an indication of what proportion is registered?

AUTHOR RESPONSE: We believe it is too early to estimate from the data in our study what proportion of published SRs are registered in PROSPERO, because the majority of registrations occurred in the last two years. Therefore, there has not been enough time for these SRs to have been completed and published. We suspect that in the next few years we will be able to have a better sense of how many published SRs are registered.

Does PROSPERO give an indication of status? The authors state in the Discussion that all 30,000 systematic reviews are still underway. Does PROSPERO have a field for inclusion of the published systematic review and, if so, is it possible to populate this automatically from PubMed in the same way as ClinicalTrials.gov (based on registration numbers in the abstract)?

AUTHOR RESPONSE: PROSPERO does give an indication of status, with options including “ongoing”, “completed but not published”, “completed and published” (the field is “Current review status”). There is also a field titled, “Details of final report/publication(s)” where authors can give the full citation for the final report or publication of the systematic review, including the URL where available. Such information must be manually entered by authors. We have noted this in the paragraph in the Background which describes the PROSPERO database (see page 5).

As all authors have interests, I recommend replacing ‘are free of conflicts of interest' with ‘unbiased'.
AUTHOR RESPONSE: We have revised “are free of conflicts of interest” to, “are free of financial conflicts of interests”, since we believe that avoidance of the latter type of interest (where possible) is most important.

The lack of SRs registered by industry is surprising, and it would be interesting to study (e.g. in a survey) what the reasons for non-registration of systematic reviews by a range of investigators might be.

AUTHOR RESPONSE: We agree this line of research would be interesting to conduct in future, and have stated so in the Discussion (see page 13).

The creation of PROSPERO was a landmark in evidence-based medicine, and all involved should perhaps be acknowledged in this celebration of its achievements. Perhaps the greatest mark of success is that the world's first pan-institutional registry of systematic reviews is still its largest and most widely used.

AUTHOR RESPONSE: We agree, and appreciate the reviewers’ enthusiasm for PROSPERO!