

# Assessment of Usefulness of Randomized-Control Trials in Child Health Research Published in 2007 and 2017

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## INTRODUCTION

Research waste is a critical issue that may seriously undermine the investment in research. There is growing interest in the need to recognize and mitigate research waste in clinical research and particularly randomized controlled trials (RCTs).

It is estimated that up to 85% of global research funding can be wasted on inadequately thought out and performed clinical trials causing billions in wasted funds annually.

Ioannidis has identified the key importance of examining clinical usefulness as a major contributor to research waste<sup>1</sup>. Some identified areas impacting the clinical usefulness of research include insufficient synthesis of prior similar research, using research questions that are not relevant to users' needs, and a lack of accessibility and transparency of research protocols and results.

## AIM

Using a research tool composed of clinical usefulness criteria and a sample of 600 RCTs, our study aims to examine the main factors causing research waste, and how these factors have changed in pediatric RCTs from 2007 to 2017.

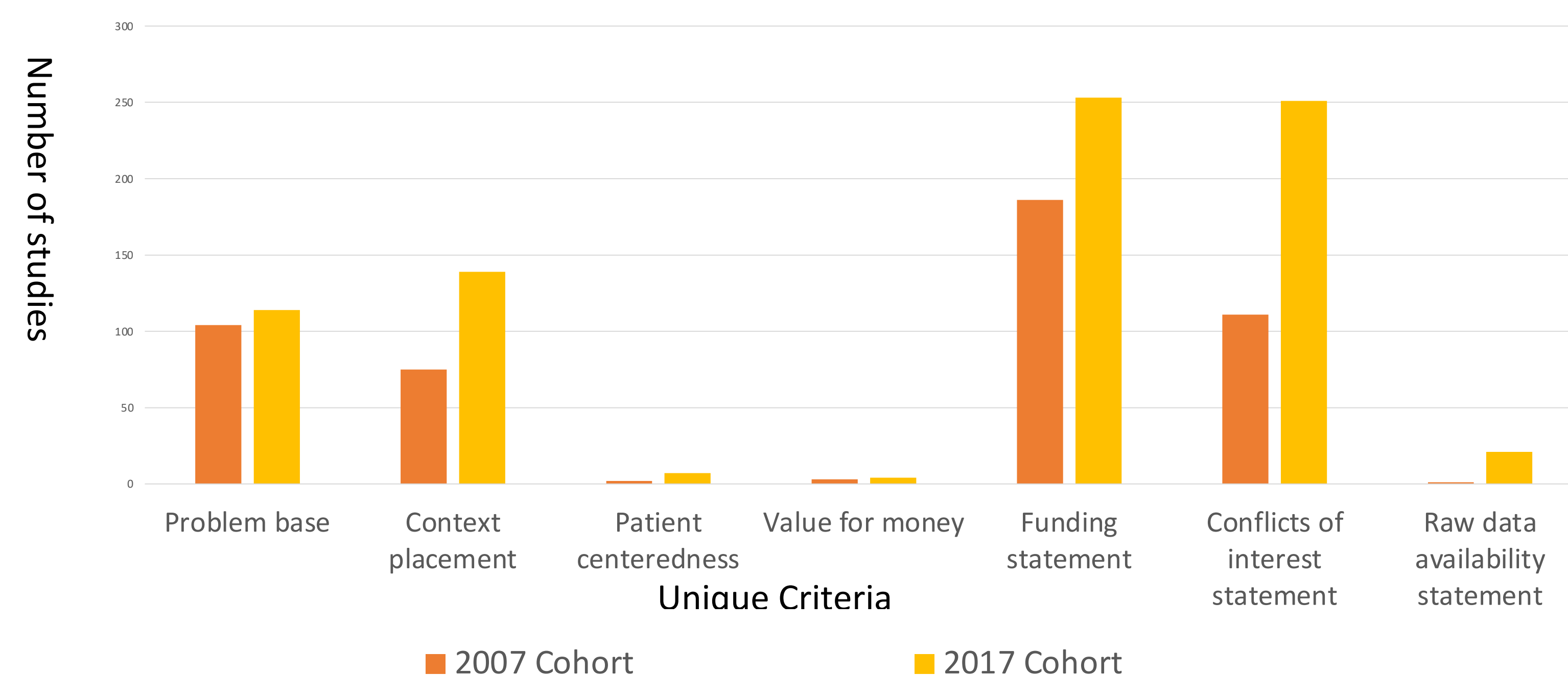


Figure 1. Single question criteria receiving "Yes"

## METHOD

- We leveraged an existing sample of child health RCTs published in 2007, used by our team previously
- Using the same methods, a librarian executed a literature search in the Cochrane Central Register of Controlled Trials to create the 2017 cohort, creating two cohorts of 300 publications each in 2007 and 2017
- Our team created a data extraction guidelines, derived from a usefulness criteria tool created by van't Hooft<sup>2</sup>
- Data regarding primary and secondary outcomes, as well as 11 unique criteria of clinical usefulness were extracted from each RCT
- Each publication was then graded using a grading tool created by our research team

## RESULTS

Graphical representation of results are demonstrated below.

All unique criteria increased from 2007 to 2017.

The mean score increased from 6.07 in 2007 to 9.20 in 2017 (P<0.001).

Criteria that saw the largest increase in reporting were context placement, increasing from 75 studies in 2007 to 139 in 2017, funding source statements, increasing from 80 studies in 2007 to 226 in 2017, and conflict of interest statements, going from 81 in 2007 to 251 in 2017

Areas that need improvement are patient centeredness which had 2 studies in 2007 and 7 in 2017, value for money which had 3 studies in 2007 and 4 in 2017, and raw data availability which had 1 study in 2007 and 21 in 2017.

## CONCLUSION

Our results demonstrate that clinical usefulness of pediatric research improved over this 10-year period. There are areas that need a great deal of improvement to maximize clinical usefulness and reduce research waste.

This review has the potential to influence future research concerning pediatric clinical trial usefulness by providing a framework for effectively analyzing and grading RCTs. It may also encourage discussion regarding research waste, with the goal of creating better health outcomes.

## References

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- 2.) Hooft, J. van t, Dijk, C. van, Axfors, C., Haber, N., Alfirevic, Z., Oudijk, M., Mol, B., Bossuyt, P., & Ioannidis, J. P. A. (2021, September 8). *Value of clinical research: Usefulness Tool Development and systematic review of 350 randomised controlled trials in preterm birth*. Authorea. Retrieved July 22, 2022, from <https://www.authorea.com/doi/full/10.22541/au.162437845.50400817/v1>

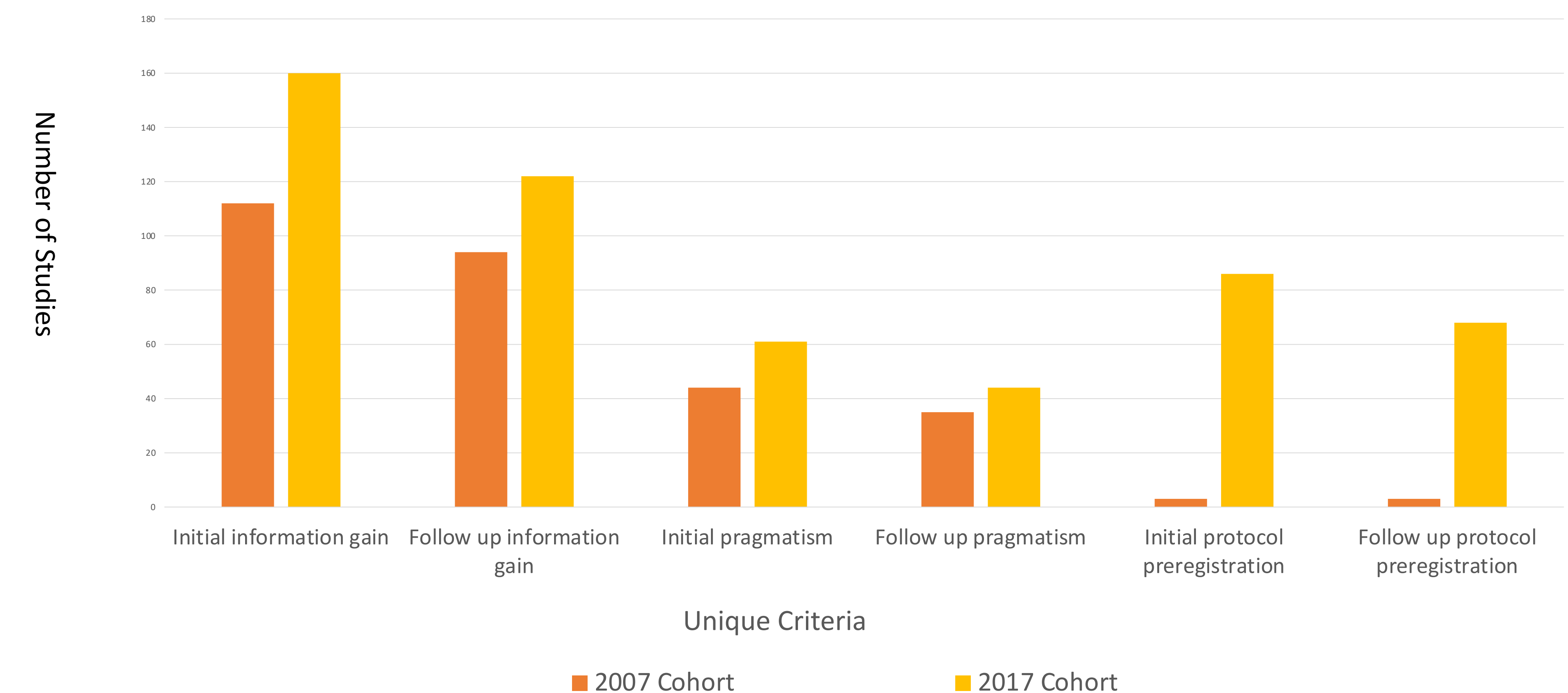


Figure 2. Multiple question criteria receiving "Yes"

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