Reviewer’s report

Title: Impact of US Industry Payment Disclosure Laws on Payments to Surgeons A Natural Experiment

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Reviewer: Lisa Parker

Reviewer's report:

This paper aims to explore the impact of US industry payment disclosure laws by using a novel approach. The authors report that a cohort of orthopaedic surgeons were required to report industry payments from hip and knee joint manufacturers for several years prior to the introduction of the national legislation. The authors assume that there will have been no impact on these surgeons from the new laws, and this cohort can therefore be used as a control group, against which non-orthopaedic surgeons are compared.

The authors chose to assess the impact of disclosure laws by looking at several facets of industry payments to doctors: number of payments per surgeon (total and median), dollar amount paid to each surgeon (total and median), and nature of payments -"general" including food/beverage and other; and "research".

Specific comments

Title

The use of ‘pharmaceutical’ in the title is misleading because the paper is at least partly about payments from the medical device industry.

Introduction

P3 line 30 - ref 2 is not really 'contemporary' to the present day since it was conducted in 2007 and prior to the introduction of the laws
There are some minor grammatical issues (eg starting a sentence with "and" p4 line 34).

Methods

Note: I am not a quantitative researcher and not able to comment on the quantitative methodologies used.
A little bit more work needs to be done by the authors to justify why they looked specifically at payments related to: general food and beverage / general other / research
I would also like some justification from the authors about why they only compared median figures (median number of and median value of payments) between the two cohorts, and did not also compare total figures between the two cohorts.

Results

I found it confusing to have the results describing payments as "general - food and beverage," "general - other" and "research". Perhaps it would be simpler to have 3 separate categories, rather than 2 categories with one of those divided into two parts.

The text outlining the 2014/2017 General Payments and Research Payments seems to be too much unnecessary detail, which might be better left to the tables, especially as the absolute figures are not immediately relevant, since the focus of the study is on comparing the difference between 2014 and 2017 payments in the two groups. One or two lines highlighting key findings would suffice here.

The text on differential impact of the legislation on the two cohorts (starting p 10, line 28) is difficult to follow (again, perhaps in part due to the confusion with 2 payment categories but 3 different subsets within those 2 categories). Perhaps a small, simple graph to accompany the tables would assist the reader.

Discussion

I think it would be worthwhile for the authors to include a comment about risk of bias associated with industry funded research. While industry funding certainly provides welcome grant money for many researchers, it does skew the research agenda (Fabbri, 2018) may be associated with publications bias, and has been shown (at least in the pharmaceutical industry context) to be more likely to deliver results that accord with industry interests.(Lundh A, Lexchin J, Mintzes B, Schroll JB, Bero L. Industry sponsorship and research outcome. Cochrane Database Syst Rev 2017;2) In the setting of a paper exploring the impact of industry payments in healthcare, the authors' unquestioning approval of industry funded research seems under-researched.

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