Reviewer’s report

Title: The Rise of Digital Direct-to-Consumer Advertising?: Comparison of Direct-to-Consumer Advertising Expenditure Trends from Publicly Available Data Sources and Global Policy Implications

Version: 1
Date: 27 December 2014
Reviewer: Thomas Vreugdenburg

Reviewer’s report:

Thank you for offering me the opportunity to review this manuscript. There are two key findings reported in this paper that demonstrate a unique contribution to DTCA literature: first, that expenditure on eDTCA is increasing while expenditure on television DTCA is decreasing, and second, that the poor quality of publicly available data on DTCA expenditure is a major impediment to research and policy decision making in the area. This is a well written article that demonstrates a need for increased transparency in DTCA expenditure for pharmaceuticals, but could be improved by focussing the message of the article around the key findings rather than the side-issue of physician promotion.

- Major Compulsory Revisions

1. Much of the emphasis of this manuscript has been placed on the percentage increase in eDTCA expenditure, despite the actual expenditure on eDTCA being relatively small. This concession was highlighted in the discussion as a minor point, but the large emphasis placed on this result throughout the manuscript makes the paper seem unbalanced.

2. The conclusion states “Physician-directed drug promotion is likely becoming less attractive in an environment mandating oversight, enforcement, and increased transparency over physician-industry relationships. This may encourage further growth of DTCA and emerging forms of eDTCA that target the patient instead of the physician.” This conclusion appears to be largely speculative and unsupported by the data, given that total DTCA expenditure either plateaued or DECREASED between 2005-2009 (depending on which source you believe to be the most robust). This issue is linked to comment 8 in the discretionary revisions. The message of the paper could be simplified by focussing on DTCA and removing the physician promotion component.

3. In Appendix Table 1, the 2005-2009 data for Nielsen from the final “source” row do not add up what I presume is the total for all DTCA expenditure by Nielsen reported in the third “source” row. I may have misread somewhere, but is there a reason these totals do not add up?

Minor Essential Revisions

4. Figures 1 and 2 are missing axis titles.
5. The term “subcategories” has also been written as “sub-categories” and “sub categories”.

6. References 6, 7, 10, 23, 27 contain dead links. All of the hyperlinks include the close bracket “[”, so when the link is clicked it returns a broken page. Copying the links without the bracket and pasting into a browser works fine. Amending the links should be a simple task.

7. The grouping of data in Appendix Table 1 does not follow a logical structure. Some rows are grouped by source, some are grouped by type of advertising. This has resulted in duplication (e.g. DTCA for IMS Health is reported twice), and makes the Table a little confusing to read at first. This table could be simplified by grouping rows by either source or type of advertising, and removing duplicate entries.

- Discretionary Revisions

8. I understand that physician promotion is an interesting aspect of pharmaceutical marketing, but this minor addition to the results acts as a red herring. It doesn’t strengthen the discussion, and further confuses Appendix Table 1. If the authors choose to remove this aspect of the analysis, the second “source” row in Appendix Table 1 (i.e. the IMHS Health row) can be deleted altogether, which will remove some duplication of data within the table and allow it to be simplified.

9. Background paragraph 3 starts with a very long and complicated six-line sentence that can be simplified. This would be particularly useful for readers that are not familiar with U.S. regulations.

10. Figure 2 could be improved with a few minor amendments:
    a. The title should read “percentage change” not “percentage increase”.
    b. Adding additional gridlines to the y-axis will make it easier to infer values from both the % change and total expenditure graphs. This will require some adjustment to the scale of the % change line graph so that the gridlines have the same spacing interval as the expenditure column graph.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests