Reviewer’s report

Title: Impact of a change of bronchodilator medications in a hospital drug formulary on intra- and out-of-hospital drug prescriptions: interrupted time series design with comparison group.

Version: 1 Date: 10 Mar 2020

Reviewer: José Massougbodji

Reviewer's report:

Thank you very much for giving me the opportunity to review this manuscript which is very well written and very enjoyable to read. I congratulate the authors for the clarity of the information it contains.

However, I do have a few small remarks which I hope will help to improve the manuscript:
My first remark is related to the study design and the limitations it might present: the authors have conducted an interrupted time series with a control group, which is a strength. Moreover, the analyses were not based on samples, but on the two populations that were comparable at first glance. Randomization would have ensured the comparability of the groups with respect to known and unknown confounding factors. Since we are not in such design here, the regression analyses are inevitably subject to residual confusion, which unfortunately is neither taken into account in the analyses nor discussed as a limitation of the study. In the analysis, for example, the authors could have incorporated adjustment variables such as socio-demographic variables, determinants of prescribing and determinants of drug supply into the models. Or again, in the discussion, clearly mention this as a limitation of the analyses presented.

My second remark is related to the specification of the model presented, in particular on the interaction term between time and the pre- and post-intervention periods. These two variables actually measure the same concept of time. Does the addition of these two variables not expose the model to multicollinearity issues, which may even undermine the estimates' validity?

My final remark is rather a question and is as follows: What is the rational for examining the effect of the intervention on outpatient prescriptions? This should be clearly stated in the background but also taken into account in the discussion and conclusion sections, which is not currently the case.

Yours sincerely,

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