Reviewer’s report

Title: Effectiveness of confidential reports to physicians on their prescribing of antipsychotic medications in nursing homes

Version: 0 Date: 16 Nov 2019

Reviewer: Tamara Schloemer

Reviewer's report:

This article is relevant to the field of implementation science, using population data and objective outcomes to assess the early effects of an audit and feedback intervention. It is showing the value of "real-world data" for prescription behaviour of physicians with regard to antipsychotic medications in Ontario nursing homes. The paper is well written and of high quality.

I have minor suggestions to improve the manuscript.

Abstract
Interpretation: Here potential implications are missing as required by the journal. It might be helpful to add a conclusive sentence to inform the reader about the meaning of the results for Public Health.

Contributions to the literature
"It also compares physicians that engaged early-on in this voluntary audit and feedback initiative to those who did not, showing some systematic differences that could inform future work" Here it could be helpful to add what is meant by future work (work "on what"?) to better explain the meaning of the results and to contextualize the paper in the full implementation science literature as recommended by the journal.

Background
The background is short and concise. However, it could profit from explanation of what is known about the intervention to introduce it to the reader (audit and feedback (A&F) initiative, e.g. the goal and the meaning for prescription rates).

Methods
Page 7, line 54: "Data were obtained from administrative databases linked using encoded identifiers and analyzed at ICES." Here ICES is mentioned for the first time in the text and the full word should be used once before the abbreviation.
Lines 55-57: "…(the research team could not ability to alter these records)." This part of the sentence needs rewording.
Line 60: "…claims, vital statistics, as well as prescription data for those covered under the provincial health insurance program. [17-21]. There are two full stops/ punctuation mark.
Lines 62-65: "Section 45 authorizes ICES to collect personal health information, without consent, for the purpose of analysis or compiling statistical information with respect to the management of, evaluation or monitoring of, the allocation of resources to or planning for all or part of the health system." This sentence is complex/uncomfortable to read. Maybe two sentences or re-formulation could make it easier for the reader.
Line 97: "(INST)" The full word should be used here (first time of mentioning). Further, the explanation is missing in the abbreviations.
Lines 118-119: HQO uses administrative data sources to report on a series of quality indicators. Physicians across the province can sign up to receive confidential information about their practice. Full stops are missing/typing mistakes.

Line 184-185: "Given the risk of type 1 error, we a priori selected a p-value threshold of 0.01 to assess for statistical significance." Why then is a confidence interval of 95% chosen/reported to test for significance of 0.01 level?

Results
Page 14, Line 207: "between these those who did and did not sign up to receive a report, but those who signed up..." Grammar

Lines 219-221: "Figure 3 describes the model-adjusted output for the mean percentage of days receiving antipsychotic medications for each exposure group at baseline, Q1 and Q2. Figure 4 depicts the model-adjusted change in prescribing at each timepoint, relative to the baseline value." This paragraph is very short. It would be helpful for the reader to explain the key finding for each figure in the text.

Figures 3 and 4: Why did benzodiazepine use drop from adjustment in this model?

Lines 223-224: "Supplementary Figures in the appendix depict the model adjusted change for the balance measure, the percentage of days on benzodiazepines, and for the tracer measure, the percentage of days on statins." The names of the figures should be mentioned here to make it easier for the reader to directly find them.

Lines 224-225: "Together, these figures illustrate change over time in antipsychotic prescribing for those who viewed the reports but no other changes for other groups or outcomes." This sentence is imprecise with regard to data shown and (in the way it is formulated) seems to contradict the findings in table 3. Please differentiate findings more clearly.

Discussion
Page 15, line 245 "The clinical significance of the decrease is uncertain." Please explain to the reader what you mean by this.

Page 16, line 261: "...identified that foreign medical graduates may be more likely to over-test or over-treat.[25]" full stops/ punctuation mark.

Tables and figures
Some typing mistakes in the legend (pages 28-31), table 2 legend needs to be added (p. 27). Figures S1 and S2 have no legend.

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