Reviewer's report

Title: Social disparities in the use of colonoscopy by primary care physicians in Ontario

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Reviewer: Geoff M Forbes

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Major revisions

1. The concept of "use" of Cy- whether this is by the PCP, or alternatively patient. The manuscript is ostensibly about PCP use, but how this can be distinguished from "patient use" is muddled in places.

2a. "Discretionary Cy". This is a theme throughout the paper, and one I have concerns about. I understand what the authors are trying to get at, but feel this issue requires attention. Some examples of where I had some misgivings were: methods section- definition of "discretionary Cy"; is Cy ever "discretionary"; table 2 suggests the vast majority of Cy was considered "discretionary"; when does discretionary Cy become "unnecessary Cy"; accordingly the conclusion implies lack of Cy access to socio-economically disadvantaged- maybe a contrary view is that the SE advantaged are having Cy too readily!

2b. In the limitations section of the discussion the authors state: "We made the reasonable assumption that a Cy was 'functionally' a screening procedure (discretionary) if there was no discernible clinical indication for the procedure......". How did they determine this? They go onto state: "......the vast majority of Cy performed- even those in patients with GI symptoms or in whom a diagnosis of CRC may be suspected- are actually discretionary in nature." I am afraid that I disagree strongly with this statement.

3. Older PCPs were more likely to refer for Cy; equally older patients were more likely to have Cy. Do older patients have older PCPs? I could not gather from the paper whether this has been teased out. Same issue applies to gender.

4. Methods, "identification of screen-eligible patients", last sentence first paragraph: ".... most Cy done in patients with no GI symptoms, or mild symptoms......". What is the evidence for this?

5. Methods: excluded were patients residing in regions where physicians do not direct bill. What percentage of the cohort are we then missing?

6. Methods; identification of Cy; last sentence: some patients had direct access Cy without first being seen by a physician; others were seen by a physician first- do the authors know the relative proportion, and how might this influence results? For example, when referred appropriately, direct access Cy can be very effective at minimising waiting times and expediting Cy; when done badly, the converse, and different physicians will have different practices in vetting the appropriateness for the Cy.
7. Results, paragraph 4: "there appears to be.......", and "Fig 2 illustrates trends.......". Suggest this is modified. There either is an increase or there is not.

8. Discussion: first statement: "....access....". I would prefer to see a different word used. Access can be measured in a number of ways (eg waiting times). Simply because one PCP "utilises" Cy services more than another doesn't necessarily mean those patients have different levels of access.

9. Table 1: there are trends with time within the characteristics of the PCPs and their patients; PCPs older, longer in practice; patients younger, fewer with comorbidities, etc- what are the implications of this?

10. Table 4: for several parameters the magnitude of difference is small, yet statistical significance was found (eg yrs of PCP experience, patient age, rural location, in work)- what are the real implications?

Minor revisions
1. Methodology is somewhat lengthy.
2. Fig 1 not needed as data are given in table 3.
3. There is a tremendous amount of information in fig 2, could this be modified downwards?

Discretionary revisions
1. Abstract, background: "The rate of colonoscopy...." I might have chosen a different term to "rate". Further this background statement forms part of the results data, which is unfortunate.
2. Methods, "identification of screen-eligible patients". Sentence 2 and 3 are repetitive.

Level of interest: An article whose findings are important to those with closely related research interests.

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.