Author’s response to reviews

Title: Sociodemographic correlates of urine culture test utilization in Calgary, Alberta

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Author’s response to reviews:

Editor Comments:

1. Consent

Please ensure a statement regarding consent is present in the 'Ethical approval and consent to participate' declaration section.

Response:

The following statement regarding consent is now included (page 4, line 22 and 11, line 9):“The study protocol was approved by the University of Calgary Conjoint Health Review Ethics Board and a waiver of consent was granted (ID#REB15-0629).”

2. Title page

Please include each authors' email address on the title page.

Response:

Authors’ email addresses are now provided, page 1, lines 33-37

3. Maps

Can you confirm that you have permission to reproduce these map images in the figures (and that the copyright owner is aware that your manuscript and the accompanying images will be
The maps presented in the manuscript are original maps generated using ArcGIS v9.3 geo-mapping software under license owned by the University of Calgary and, as such, are not under copyright. The following statement has been added to the Figure 2 legend: “Maps generated using ArcGIS v9.3 geo-mapping software.” (page 18, line 6)

Reviewer #1: I have reviewed the manuscript, "Sociodemographic correlates of urine culture test utilization in Calgary, Alberta." by Griener et al.

General Comments

1. The study examines urine culture practices in a single city, Calgary, using strong methods from a large database. This study is novel in that it looks at a very large database and has some novel findings, especially that persons of lower socioeconomic status receive markedly less urine culture testing. There are many strengths to the study, including the fact that the city’s uses a single microbiology laboratory to help track urinary cultures.

2. The manuscript is well written. The methods are very strong.

3. Some results, like the association between income and urinary culture testing are quite interesting and secondary analyses may shed further light on the unusual findings. The authors may wish to do some analyses, for example, of whether person of low socioeconomic status (SED) are more likely to get urinary testing in the ED, which may explain higher testing rates in this population.

Response:

The reviewer raises an interesting point about the differing location of testing based on patient socioeconomic status. However, the focus of our analysis was directed at the question of who was receiving urine culture testing, as opposed to where this testing occurred. As we have discussed, the explanation for increased testing rates in individuals of lower socioeconomic status is likely multifactorial and will require a detailed investigation. Although we agree that investigation should include the differences in access to healthcare and where testing is performed, we believe it to be a complex question to answer and beyond the scope of the present manuscript.

Specific Comments
1. Abstract, Line 17: the term "First Nations" status is unclear to me and not clear in the manuscript. Consider another term or referencing a source for this term.

Response:

This term is used by Statistics Canada and represents the largest Aboriginal group in Canada. The term is now clearly defined and referenced as follows: “Aboriginal - First Nations descent (North American Indian, as defined by Statistics Canada)”, with new reference to Statistics Canada definition. (page 5, line 19)


To improve clarity throughout the manuscript, the term “First Nations” has been replaced with “Aboriginal – First Nations” (page 2, line 17, page 7 line 21, page 14 Table 2).

2. Page 7, line 1. Results. The proportion of culturing (e.g., 67.9% in the community) is a very interesting finding and very descriptive as it describes the population under study. These sort of results should be considered for the abstract.

Response:

We agree that this finding is interesting and provides valuable insight into the study population. As requested, this has been noted in the abstract with the following sentence: “The majority of cultures were received from the community (67.9%)” (page 2, line 15)

3. Discussion: I think the biggest limitation of the study is that results are not correlated with clinical syndromes so it is unclear which of these urine cultures are appropriate or not. I think the authors should be more explicit about this limitation in the discussion section.

Response:

As requested, we have explicitly stated this limitation in the discussion with the following statement: “Because this study was retrospective and involved a very large number of patients, we were unable to collect clinical information or assess other concurrent laboratory testing (such as urinalysis or testing for sexually transmitted infection). As a result, we cannot ascertain the clinical appropriateness of urine culture testing. However, the variability in test ordering across the city without clear explanation is highly suggestive of inappropriate utilization.” (page 9, line 22-26)

4. Other limitations include that these measures of urine culturing are probably a tad low as residents could get testing outside of the Calgary, just as some outsiders got testing within Calgary.
Although it is possible that these numbers are a slight underestimate, Calgary Laboratory Services provides microbiology diagnostic services to the entire city of Calgary as well as the surrounding area. Because there are no other laboratories providing microbiology testing within 100km, we predict the number of individuals having testing elsewhere to be quite small and unlikely to impact our findings.

5. Discussion. Page 10, line 14. The authors conclusion (first sentence) should be modified to make it clear the increase in urine culture testing is something found locally in Calgary, and not more widespread. We don't know if this trend holds in other locales.

Response:

This sentence has been amended to state: “we have shown that test rates continue to increase in Calgary and that substantial heterogeneity exists in test utilization across the city” (page 10, line18)

6. Table 2. The term "Visible" in "Visible Minority" is unclear. Consider another term or referencing a source for this term.

Response:

The term “visible minority” has been removed from the table for Chinese, South Asian and Filipino ethnicities. It has been retained for “Visible Minority – Black” as this does not refer to a specific ethnicity and is a grouping defined by Statistics Canada. A reference to Statistics Canada definition for these terms is now also included in the methods section (page 5, line 21).