Reviewer’s report

Title: Initial Impact and Cost of a Nationwide Population Screening Campaign for Diabetes in Brazil: a Follow up Study

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Reviewer: Thomas J Hoerger

Reviewer’s report:

General

This is an interesting study of a large-scale diabetes screening program in Brazil. The study is interesting beyond Brazil because, although a large number of persons are known to have undiagnosed diabetes worldwide, few if any attempts have been made to systematically screen for the disease. Knowing whether large-scale screening programs can successfully detect the disease, and at what cost, will help policymakers decide whether to adopt such programs.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The key cost result is that the cost per diabetes case diagnosed was US$58. However, it is not immediately clear how this number is calculated. The abstract reports that total costs were $16.4 million and 346,168 new cases were diagnosed. These numbers suggest a cost per case of $47. I suspect that the $58 figure is calculated correctly, and that the missing $11 includes the cost of confirmatory testing. The paper should explicitly show the calculation of total costs (=screening + confirmatory costs) and costs per diabetes case. The correct total costs should be reported in the abstract.

2. Screening costs are reported at the aggregate level, while costs for confirmatory tests are reported at the component level. It would be useful to know a little more about the screening costs at the component-level detail. For example, it looks like the costs of reagents and glycometers amount to $0.60 (=13.19 million/22 million screens) per screen. This would be important information for policymakers assessing costs in their country. Similarly, it isn’t clear what is included in the mobilization cost of $3.11 million. Is this labor costs? In countries like the U.S., labor costs of the program would likely dwarf the test costs. If labor is included—as they should be because they represent opportunity costs—in the $3.11 million figure, it is worth noting that low labor costs helped make the plan successful in Brazil. If labor costs are not included, the total costs of the screening program will be understated, perhaps seriously.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Page 11, last paragraph beginning "A greater fraction..." It wasn't clear to me that the fasting cut point selected would be more sensitive and less specific than the non-fasting one. Although the fasting cut point is lower, the two cut points were presumably selected because each offered the best combination of sensitivity and specificity given fasting status.

Study limitations. It might be useful to add a couple of others. It's worth mentioning the two municipalities that were dropped. It should be noted that confirmatory testing and follow-up care were based on self-reports based on interviews conducted one year later, rather than on actual confirmatory testing data. These are not fatal flaws, but should be mentioned.

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.