Author’s response to reviews

Title: Decline in reported AIDS cases in Brazil after implementation of the Test and Treat Initiative

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Peer re-review, Mendes Pereira-GF et al., Decline in reported AIDS cases in Brazil after implementation of the Test and Treat Initiative, for BMC Inf. Dis., October 2018

GENERAL COMMENTS:
The authors have addressed all my comments, and the analysis and manuscript have improved.

Response: Thanks for this comment and for your relevant comments throughout the submission process.

I have one major comment still, on the Results description in Abstract and Results – which appear to be inconsistent with Figure 1.

In the ABSTRACT, I think it should read:

In segmented Poisson regression, the decline in AIDS detection rate over 2007-2014 was 2.0% annually (i.e. an odds ratio for annual decline of 0.98 [95% CI: 0.98-1.00, p-value < 0.001]). The observed AIDS detection rate in 2015 was 7.7 per 100,000, 60% lower than the regression estimate of 19.8? for the hypothetical absence of Test and Treat in 2015.

The decline in AIDS-attributed deaths over 2007-14 was 8.0% annually (i.e. an OR for annual decline of 0.92 [95% CI: 0.91-0.95]. The observed AIDS mortality rate in 2015 was 0.49 per 100,000, 73% lower than the regression estimate of 2.1 absent Test and Treat in 2015.

And in the RESULTS, this is unclear. I suggest you rephrase as:
The AIDS detection rate (per 100,000) before the Test and Treat Initiative (2007-2014) was 20.45; right after its implementation (2015), the rate was 7.70 (Figure 1), a crude 62% decline. In segmented Poisson regression, the decline over 2007-2014 was 2.0% annually (i.e. an odds ratio for annual decline of 0.98 (95% [CI: 0.98-1.00, p-value < 0.001) and the predicted AIDS detection rate in 2015 absent Test and Treat in 2015 would have been ?19.8?. Thus, the estimated drop in 2015 (adjusted for the pre-2015 trend) was (1-7.7/19.8) = 60%.

The mortality rate was 2.32 (per 100,000) before the Test and Treat Initiative (2007-2014); right after its implementation (2015) (Figure 2), the rate was 0.49, a crude 79% decline. In segmented Poisson regression, the decline over 2007-14 was 8.0% annually (i.e. an odds ratio for annual decline of 0.92 (95% [CI: 0.91-0.95), and the predicted AIDS mortality rate in 2015 absent Test and Treat in 2015 would have been 2.1. Thus, the estimated drop in 2015 (adjusted for pre-2015 trend) was (1-0.49/2.2) = 73%.

Response: Thanks for this comment. The text in the abstract and results have been reviewed and corrected.

Specific comments:

METHODS:
Page 7, ‘were obtained’: Add the type of source, e.g ‘from national program data’, or ‘from the national Health Information System’.

Response: Thanks. The data source has been added in this version.

RESULTS:
Page 10-11: Suggest to order and structure as follows:

Sub-sections:
1. Key indicators of the cascade of HIV care
2. Modes of HIV exposure among reported AIDS cases

In ‘… more than 4500,000 people were receiving ART’, please add: … ‘in ?2015?’

Response: The changes suggested and clarifications have been included in this new version.

DISCUSSION:

5th line: I would keep the ‘in December 2013 and its subsequent implementation in 2014’ – even if this now repeats the Introduction.

Response: The clarification has been added. Thanks for this comment.

Page 14-15: The 3 paragraphs about the modes of transmission and their shift over time (from: In men, there was an increasing…’ until: ‘… well-educated men’) can be shortened.

Response: The para has been shortened.

TABLE 2: Suggest to rename the title as:
Mode of HIV exposure among reported new AIDS cases, Brazil, 2007-2015 (%).

Response: The title of Table 2 has been renamed but adding “by sex” Mode of HIV exposure among reported AIDS cases by sex, Brazil 2007-2015 (%)

TABLE 3. Please consider to add a row, at the bottom, with the total New AIDS cases – which would be useful to see compared to the numbers of New HIV diagnoses and PLWH alive on ART, within this table.

Response: The total New AIDS cases have been added at the bottom of the Table.