Reviewer's report

Title: Good continuum of HIV care in Belgium despite weaknesses in retention and linkage to care among migrants

Version: 3
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Reviewer: Janne Estill

Reviewer's report:

This paper describes a statistical study of the state of the cascade of HIV care in Belgium. The authors found that 62% to 72% of all diagnosed HIV positive people are virally suppressed in Belgium. The major challenge in improving the continuum of care seems to be the identification of the undiagnosed.

Major compulsory revisions:

1) It is unclear what has happened to the patients dropping out in the different stages of the cascade. For example, is there any way to roughly estimate the proportion of different reasons for not being retained in care (e.g. deaths, stopping treatment, moving out of the country, etc.)? How about the reasons of not being virally suppressed?

2) My main concerns in the methodology are the definitions of the rates and proportions used in the cascade. Since proportions from the different steps are combined into overall estimates of virally suppressed among all diagnosed patients, the authors should be careful to check that these proportions are combineable.

2a) Linkage to care is now defined as a proportion of all patients diagnosed between 2007 and 2010 who are linked until 2011. This may not be appropriate since those who were diagnosed in 2007 have a much longer follow-up time than those who were only diagnosed in 2010. Is the intention to calculate the proportion of patients who ever will be linked to care (which would be expected to be very high since most patients would seek care at the latest when they develop symptoms), or who are linked to care within a certain time period? I expect that the outcome that is used now will provide an estimate which is between these two values.

Figure 1 shows that most patients (98%) were retained in care within 1 year of diagnosis. Is this true also for those patients with a long follow-up time? If yes, this would justify the method the authors have used for calculating the proportions of linked patients.

2b) Also the definition of retention should be still clarified. What does "in care in 2010" - is one lab measurement in 2010 sufficient?

3) It would be helpful to present the guidelines of HIV care that are applied in Belgium. Is ART recommended for all HIV diagnosed patients, regardless of CD4 cell count, clinical stage, partnerships, etc? If not, how often is the ART eligibility
monitored? What is the schedule of recommended laboratory tests (VL, CD4, etc) before and during ART?

4) A brief description of the Belgian health care system from the point of view of HIV would also be helpful. What are the different routes of testing, i.e. where can an individual get tested if he/she suspects being infected? Are there any campaigns or other active screening interventions in place among risk populations (MSM, IDUs, FSW, migrants from high-prevalence countries)? How is it ensured that e.g. illegal immigrants and IDUs can get tested without the fear of having legal consequences – do the authors expect a bias in such patient groups?

Minor essential revisions:

5) Typo in the last paragraph of Results: the upper proportion of virally suppressed should be 72%, not 86%.

Discretionary revisions:

6) The UNAIDS has recently published the ‘90-90-90’ targets. This could be also discussed in this study. According to the targets, by 2020 81% of patients diagnosed with HIV should be virally suppressed. This analysis shows that there is still work to do to achieve these targets even in high-income countries such as Belgium.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.