Reviewer’s report

Title: HIV/AIDS length of stay in Portugal under financial constraints: a longitudinal study for Public hospitals, 2009-2014

Version: 0 Date: 06 Aug 2018

Reviewer: Alberto Freitas

Reviewer's report:

This paper aims to analyse factors associated with HIV/AIDS length of stay (LOS) among Portuguese mainland public hospitals, and the possible effect of the economic and financial adjustment programme (EFAP) on LOS.

This paper may increment the knowledge about factors possibly affecting LOS on HIV/AIDS related hospitalizations, but it needs improvements and additional discussion. Some limitations are discussed, but several other might also be discussed (for instance the use of data only from public hospitals).

Other comments:

Why only study data from HIV/AIDS hospitalizations?

Why was the selection performed with MDC 24 and not using the ICD diagnosis codes? What are the potential differences between this and the used approaches?

Authors refer that they analysed data from 41 public hospitals (among how many hospitals? And private hospitals?). Please include additional information to better understand the magnitude / scope of the used data.

The data used in the analysis was collected from the national database of diagnosis related groups (DRG). There are different types of DRG definitions (AP, APR, MS, among other). Please clarify.
Typically, the DRG data in Portugal includes both inpatient and outpatient data. In this study it is not clear if outpatient data was also included.

Authors say that they did not exclude hospital transfers. They also say that "hospitals were coded as to simulate the current Hospital Centre they are part of". As so, why not also merge data from transfers within hospitals of the same centre, including the merge of possible LOS in these within-group transfers?

An increased number of hospital centres may imply less transfers (with the majority of them within hospitals of the centre, and thus not being reflected in the database), and possibly an increased LOS (because it is not split among hospitals). Is this plausible?

How were readmissions within 30 days of discharges defined and calculated? Please clarify.

How where the selected co-infections / diseases (e.g. Pneumocystis pneumonia, Hepatitis B, Hepatitis C, and Tuberculosis, HIV) identified? Which conditions and/or ICD codes where used?

The number of secondary diagnosis was included in the analysis. Why not a comorbidity measure/score?

The number of procedures were also included in the analysis. What does this measure? There are many differences between procedures, e.g. between medical and surgical procedures.

"Setting covariates included whether the hospital was merged into a Hospital Centre or not". Why not use additional variables for complexity / casemix of hospitals?

Due to the nature of the LOS distribution, why present the average LOS, and not the median (and IQR)?

p.7, "The number of secondary diagnoses and the number of procedures both increase estimated HIV/AIDS LOS". How can we be sure of the direction of the association?
It was interesting to find that the merger of hospitals into hospital centres increased HIV/AIDS LOS. As pointed previously, additional analysis, with the merge of episodes form hospitals of the same centre (and also LOS), are needed to reach such a conclusion.

Additionally, estimated HIV/AIDS LOS was shorter in hospitalizations occurred between 2012 and 2014, compared to hospitalizations taking place between 2009 and 2011. In the 6-year period, the 2nd higher yearly LOS average occurs in 2014...

Hospitals 39, 40 and 41 are the least efficient in terms of risk-adjusted LOS for HIV/AIDS patients. If possible, provide additional analysis comparing these hospitals with the others.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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