

JASA A&CS Reproducibility Initiative - Author Contributions Checklist Form

The purpose of the Author Contributions Checklist (ACC) Form is to document the code and data supporting a manuscript, and describe how to reproduce its main results.

As of Sept. 1, 2016, the ACC Form must be included with all new submissions to JASA A&CS.

This document is the initial version of the template that will be provided to authors. The JASA Associate Editors for Reproducibility will update this document with more detailed instructions and information about best practices for many of the listed requirements over time.

Data

Abstract (Mandatory)

We used data from the Multicenter AIDS Cohort study (MACS) (Kaslow et al, 1987). The MACS was started in 1984, and a total of 4,954 gay and bisexual men were enrolled in the study and followed up semi-annually. At each visit, data from physical examination, questionnaires about medical and behavioral history, and blood test results were collected. For this analysis, we restricted the analysis to data from visit 7 and 21 and focused on blood test results. The CD4 count was the intermediate and final outcome of interest. The CD4 count is a time-dependent confounder because it is both an intermediate outcome of past antiretroviral treatments and a confounder of future antiretroviral treatments. The goal of the analysis to estimate the short term effect of antiretroviral treatments, i.e. every moving three-visit window from visit 7. See the study website for more information <https://statepi.jhsph.edu/macspdt.html>

Availability (Mandatory)

We requested the dataset from Johns Hopkins University Bloomberg School of Public Health Department of Epidemiology. The version we used is P25, released October 2016. Some request forms were completed in order to obtain it. The entire data set can be obtained by contacting the current research program manager of the Multicenter AIDS Cohort Study, Jeremy LaMaster at jlamaster@jhu.edu. However, the original data that we analyzed for the paper are included in the supplementary materials.

Description (Mandatory if data available)

The version we used is P25, released October 2016. The data files are in .dat format but we converted them to csv files before analysis. The datasets that we analyzed for the paper are included in the supplementary materials. Inside the subfolder dataset in the application folder, there is a zip file named rawDatasets.7z, which contains the original datasets (macsid.csv, section2.csv, outcome.csv, hivstats.csv, section4.csv, lab_rslt.csv). We used the questions in these files to determine HIV status and blood counts and demographics for each subject. The dataProcessing.R script produces the final dataset we used-data.csv.

Optional Information (complete as necessary)

This is a public data set, so there are no unique identifiers.

Code

Abstract (Mandatory)

All the codes are inside three folders: Application, oneTimePointSimulation, and twoTimePointSimulation. Inside each folder, there is a ReproduceTablesandFigures.pdf detailing the codes and how to reproduce the tables and figures.

Description (Mandatory)

The supplementary materials we submitted will be deposited on GitHub and made publicly available.

Optional Information (complete as necessary)

All the simulations and applications were run on a high performance computing cluster. R packages nlme, specifically lme function (most recent version 3.1-131.1), and R package rootSolve (version 1.7) are needed to run the codes. All the work was done in R version 3.4.4

Instructions for Use

Reproducibility (Mandatory)

All the codes to reproduce all the tables and figures from paper are inside the subfolder FiguresandPlots in each of the main folders: Application, oneTimePointSimulation, and twoTimePointSimulation. The code file name includes the table and figure numbers that it reproduces. Also the ReproduceTablesandFigures.pdf inside each of the main folders describes how to reproduce the tables and figures.

Notes

If you have questions regarding implementation of the method and codes, contact the authors.