Apr 26, 2022

Food and Drug Administration
Center for Drug Evaluation and Research 5901-B Ammendale Road
Beltsville, MD 20705-1266

Re: R Consortium R submission Pilot 2

Dear Sir/Madam:

This letter serves as an introduction to the R Consortium R submission Pilot 2. The objective of the R Consortium R submission Pilot 2 Project is to test the concept that an R-shiny based interactive app can be submitted through the FDA Electronic Submissions Gateway, and the submitted R shiny app can be redeployed by the FDA Staff on an FDA computing system.

The R Consortium R submission Pilot 2 Project is an extension of the R Consortium R submission Pilot 1, using the same data sets and with similar analysis scope. The R Consortium R submission Pilot 2 submission package includes codes and materials for both the static outputs and the R shiny app, to mimic a situation where the R shiny app is submitted as a supplementary tool to assist FDA Staff's review.

All submission materials and communications from this pilot will be shared publicly, with the aim of providing a working example for future R shiny based FDA submissions. This is an FDA-industry collaboration through the non-profit organization R Consortium.

The R Consortium R submission Pilot 2 submission package follows the eCTD folder structure and contains the following module 5 deliverables:

- Deliverables included in the R Consortium R submission Pilot 1 submission package:
    - SAS transport files (xpt) data from CDISC ADaM/SDTM submission pilot CDISCPILOT01
    - R code to generate 4 analysis outputs
    - Outputs
    - One proprietary R package "pilot1wrappers"
    - An Analysis Data Reviewer's Guide (ADRG)
- Additional deliverables that were not included in the R Consortium R submission Pilot 1 submission package:
    - A pilot 2 cover letter
    - An additional proprietary R package "xxx" which includes codes to generate the shiny app. The shiny app includes 4 tabs to cover the 4 analyses presented in the static outputs, plus additional filtering functionalities to enable analyses on subpopulations.
    - An additional appendix of the ADRG for the R shiny app (Appendix 2)

In this pilot, we aimed to provide a working example of R-shiny submission in eCTD format to the pharmaceutical industry in compliance with the FDA Electronic Submissions Gateway requirements. Based on the submission package, FDA Staff can redeploy the shiny app on FDA computing system(s) to perform interactive analyses . More specifically, we expect the FDA Staff to

- Receive electronic submission package in eCTD format

- Reconstruct and load the submitted proprietary R package, re-deploy the submitted R shiny app
- Perform statistical analyses using the interactive R shiny app
- Share potential improvements to the submission deliverables and processes via a written communication

Different open-source packages were used when generating each of the 4 analysis outputs/ 4 shiny tabs to test wider use case scenarios. Evaluating FDA's acceptance of system/software validation evidence is not in the scope of this pilot.

On behalf of the R Consortium R Submission Working Group, we hope the pilot 2 project can establish a working example to guide the industry for future submission using the R shiny.

Kind regards,
The R Consortium R Submission Pilot 2 Project Team