**Automation of statistical summary and analysis**

**Background:** Healthcare researchers need to repeatedly generate statistical summary tables and conducting exploratory analysis. Given the nature of medical research, an automation application was developed to take routine work burden off researchers’ shoulders and to expedite research process and increase productivity.

Method: We have developed a R shiny app, a user-friendly interactive clinical research tool. This app automatically generates summary statistical tables, graphs and widely used statistical analysis results using analytic data set researcher uploaded.

**Results:** This application provides those researchers who have less experience of utilizing statistical analysis tools like SAS, R, Stata an easy use web-based click tool to quickly explore healthcare/clinical data, make sense of their researcher questions, and prepare tables, graphs for publication.

This R shiny app-based platform can be used across all web explorers. It features a user interface part on the left side and analysis results part on the right side. The interactive user interface includes analytic datasets uploading button, a demo video providing tutorial introduction of this app, multiple variables click-select entries and table analysis control options. The output part provides data review, summary table(table 1), interactive exploring figures, analysis table and analytic graph.

There are no hassles of writing formula, typing variables of interest, by clicking the list of variables based on analytic data set uploaded, the app can provide researchers almost instantaneous summary table with P-values. Furthermore, the app can identify appropriate regression (logistic or linear) be conducted based on outcome variable researcher selected. A univariable and multivariable analysis results will be presented side by side for easy exploring and a result-related graph will be generated for identifying statistical significance. All the tables can be downloaded in multiple file formats including Excel, PDF, etc. Researcher can easily adjust their variables of interest based on output tables and graph, which dramatically reduces their efforts of data exploring and exploratory analysis, help move the analysis faster and more efficiently.

**Future work:** This app currently only accepts CSV file as data source, we are considering accept other file formats.  Other than regression analysis, and survival analysis, we are working on adding other widely used statistical analysis in clinical/healthcare field to our next version.