**Introduction**

In this hands-on example a R Studio project (Example 4.Rpoj) is provided that contains R code for simulating an adaptive clinical trial. This example provides a R code level view of how to simulate adaptive clinical trials. In addition, a R Shiny app is provided as a tool to help understand the value of exploring and understanding more than just false-positive and power figures for a design.

This project simulates a clinical trial to compare standard of care (S) and experimental (E). The primary outcome is binary and is observed two months, on average, after the time a patient is treated. This example code base is designed to allow users to simulate a range of design options ranging from a fixed sample design to a continuously monitored, Bayesian outcome adaptively randomized study with early selection for futility/success and evaluation of augment priors for S. Simulations may be conducted by running the R code directly in R Studio or by using the Shiny app.

This example is not intended to promote or suggest the use of any particular methodology, but rather to provide details on an approach for developing and conducting simulations of an adaptive clinical trial.

**Requirements**

R > V3.5.1; R Studio Version 1.1.463; ggplot2;

For the Shiny App the following packages are required shiny, shinydashboard, shinyBS

**Getting Started**

To gain the most insight into how and adaptive clinical trial is simulated, it is recommended to start with the Main.R and work at the R code level rather than using the Shiny app. The Shiny app makes demonstration very easy with project development teams requires less detailed knowledge of the R code base. If the user is interested in starting the Shiny app then the starting point is ShinyApp.R Once ShinyApp.R is open in R Studio the app is started by clicking the “Run App” button, circled in the figure below.

