

Project Summary Report

YODA Project Protocol #: 2024-0060

Using Synthetic Controls to Improve Randomised Controlled Trials for Rare Diseases

Objective

The objective was to train a generative adversarial network (GAN) machine learning model to produce synthetic controls. I planned on using the YODA data to train and test the model, so that I could case study results from real world data instead of just simulations.

Methods

The GAN model was built in Python and trained on simulation data based on publicly available summary level data from numerous historical randomised control trials. The plan was to take YODA data for similar outcomes, treatments, and/or diseases and train the model on some of them, then compare the synthetic controls output from the model to the remaining real control data from the other YODA trials.

Results

I did not end up using the data from the YODA project as my PhD ended up taking a different route than I originally planned.

Conclusions

N/A