**INITIAL EMAIL [PI (RYAN GALLAGHER) TO PHD (ANINDA ROY)]:**

Dear Dr. Aninda Roy,

As you remember a year ago, we worked together a grant proposal, entitled “the effect of Boosted Pfizer/Moderna COVID Vaccine on rate of reinfection within 1 year in the population of T2DM excluding T1DM”.

The great news is the proposal was funded and we will need to meet and discuss the how we will proceed with Aim 1 and Aim 2. These are the aims you planned the statistical analyses for. The proposed aims are:

**Aim 1 (testing)**: To evaluate the effect of Boosted Pfizer/Moderna COVID Vaccine on rate of reinfection with 1 year controlling for effects of significant confounders not related to boosted individuals.

**Aim 2 (prediction)**: To identify and describe risk factors associated with reinfection rate with 1 year and build a best predictive model for reinfection rate using patient level information.

In our proposal, we suggested to use deidentified Froedtert hospital data to address the aims. And described future data analyses as follows:

The primary outcomes of interest in aim 1, rate of reinfection with 1 year, defined by 'Covid diagnosis within 1 year of recieving Pfizer/Moderna booser' will be analyzed via a logistic regression model where the variable of interest 'received Pfizer/Moderna booster or time since getting the booster', defined as 'binary yes/no or days between getting booster (continuous)' will be always included in the model, whereas other covariates will be to the model only if they improve predictive properties of the model quantified by AUC (area under ROC) curve. To avoid collinearity with excessive confounding variables we will exclude variable with a variance inflation factor >10.

For aim 2 we planned to build a best predictive model using 50% of the data and validate it using the other half. We have also planned that R^2(?) be our goodness of fit measure.

Looking forward to working with you,

Dr. Ryan Gallagher, MD, Esq.

**FOLLOW UP [PhD (RYAN GALLAGHER) to PI(SAVANNAH DUENWEG)]:**

Good Afternoon Dr. Duenweg,

It was nice meeting you and discussing your proposal on Thursday March 2nd, 2023. I summarized our meeting, outline, to-do list, and timeline below. Please let me know if you have any comments, questions, or concerns.

Project Title: "The effect of BMI >= 35 on 90-day Mortality in a Population of Patients Found to be COVID Positive."

Attendees: Dr. Savannah Duenweg, Dr. Peter Lee, Dr. Ryan Gallagher, Dr. Sergey Tarima

Summary: Dr. Duenweg descibed the problem in detail. We discussed how we might address the difference in vaccination status among patients within our population. We talked about significant covariates to high BMI such as diabetes or hypertension. We discussed how we would define dates and what we'd consider day 0. We then discussed the aims and what sort of outcomes we might expect. We decided to remain in contact via email for further progress.

Population: Adult patients (18 y/o+) with a BMI >= 35 who have been diagnosed with COVID19 (ICD-10 codes).

Data: Data will consist of demographics (Age, sex, BMI), vaccination status, days of reporting data. Data must include date of diagnosis and we'll be looking for mortality within the 90 days following this diagnosis.

Data Analysis Plan: After extracting the data, it will be evaluated for mortality rate with respect to BMI. We will look at the effects of comorbiditeis such as vaccination status, demographic information, and more.

To-do List:

1. Dr. Lee and I will extract data from TriNetX and will determine how the data might be able to answer our question. Correspondance with Dr. Duenweg could be necessary.
2. Once Aim 1 has been achieved, we will reconviene to consider how our question might need to be adapted and how we might want to tackle predictive modeling.

Timeline: Dr. Duenweg would like the project to be finalized by the loose deadline of "end of April". Dr Lee and I will work to have this accomplished at or before the end of April.

-Ryan

**Evaluations:**

**Group 4:**

PhD: Rachel Schmidt

Data Analyst: Aninda Roy

PI: Juntian Wang

This group communicated effectively about the proposed project. The PI (Juntian) came prepared with even his own thoughts on the statistical analysis methods. I thought the problem itself was engaging for the researchers because of how they perused with questions. Rapport was established through general small talk about the problem and perhaps through some familiarity between the researchers. Overall, this was an effective group that stayed pretty consistently on-topic

**Group 5:**

PhD: Savannah Duenweg

Data Analyst: Rachel Schmidt

PI: Aninda Roy

This groups met to talk about the 90-day mortality for those with hypertension that got the Moderna COVID vaccination. This project started with some good report through a handshake and small talk. This group was effective in talking about the problem and brainstorming ideas efficiently. There was a lot of great discussion about the data set and data retrieval, as well as analysis methods and how they’d communicate about it. This team seems like they’ll keep in touch to continue communicating effectively.

**Group 6:**

PhD: Peter Lee

Data Analyst: Savannah Duenweg

PI: Rachel Schmidt

This group met and discussed their project which was: Effect of BMI on 30-day hospital remission among those who were COVID+. This group was focused and highly effective. Much of the discussion was about when to start this 30-day remission date, and rightly so. It seemed like a difficult distinction to make, but this team seemed like they were well equipt to handle it. There was some report in the talk between topics, as well as a general understanding for the work eachother does. This team was really well organized with dates going forward – it sounds like they’ll have some efficient sessions about this project in the future.