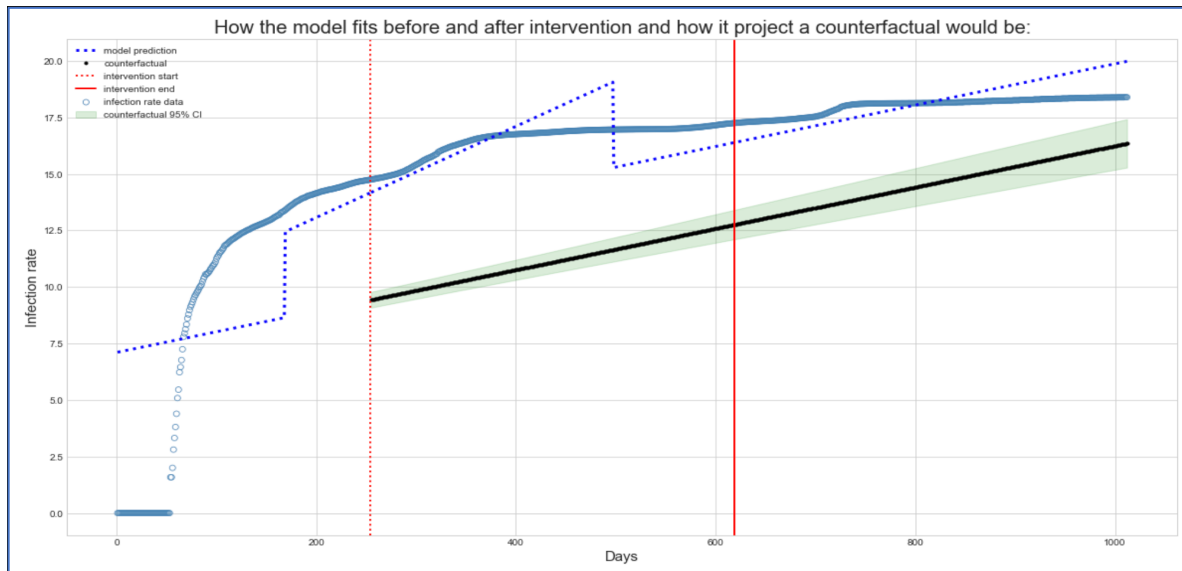


Assignment- 4

Step 3: Write & Reflect

- **Explanation of the Visualization.**



The above figure shows the model fits before and after the intervention (mask mandate) and how it projects a counterfactual would be. On the y-axis, we have the number of infections and on the x-axis, we have the number of days. The data for this analysis was obtained by merging the mask mandate data with the number of infections data and involved data cleansing and manipulation mentioned in the notebook with this assignment.

The dotted red line at 256 is the day on which the mask mandate was brought in place and the solid red line at 619 is the day on which the mask mandate was removed.

The solid blue line shows the trend for the number of infections with time. As we can see from the above graph that as the number of days increases there is an increase in the number of cases with slight variations in between. The dotted blue line shows the prediction from the OLS model before and after the intervention (mask mandate) was put in place as we can see from the graph the cases would have linearly increased with time if the mask mandate was not put in place. The decrease in the slope before and after the mask mandate was put in place is shown by dotted blue lines parallel to the y-axis as we can see from the graph that the projection based on the model decreased after the mask mandate was put in place.

In visualization, a counterfactual is a way of representing what could have happened, as opposed to what happened. This is often done by showing what would have happened if a decision had been made differently, or if a different course of action had been taken. The line in black is the counterfactual which shows that the cases would have increased linearly with time but as we see in the graph (solid blue), by implementing the mask mandate, we are flattening the curve that would have grown linearly.