**User Story B**

For this user story, we can separate the Providers by measure, and create the groups by measure. This way all the providers that do cardiovascular surgeries can be grouped together.

Another way is to group providers by how many measures they have. The more measures they have, the less likely patients will have to visit different providers for a variety of diseases.

After creating groups of providers then we can compare EMRs to see which Provider can cover the most amount of prior health issues as well as complications that could arise from these old issues.

Those are just some quick ideas with limited data and background. Depending on the data and EMRs one could come up with a more intricate program to do this. Furthermore, these ideas are based on a limited dataset.

**Question 3**

The codes I have provided are very easily modified to include more data in many ways. Starting with the proportional change code, if we have more quarters all we have to do is make it so the quarters are specified by year as well. Here I assumed there were only 4 quarters, so it was hard coded, but otherwise you can modify it by either filtering out the year ahead of time or by naming the columns “Q1\_2017” and use a regex function or something of that nature to select the correct quarters. There are definitely many more ways to do this.

For the forecasting code, it is even easier since you just have to select the new data and convert it to a time series. Everything else stays the same.

If there was a new provider level column, first we have to identify if its useful and how so. If it is then we can, in this case, use that information to determine who has the most experience and time as a provider. This can add a level of confidence for patients.