Forecasting the Future Demand of Medical Supplies to satisfy Logistic Requirements

- Team RobustSolutions

McKESSON Case Study Project

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Problem Statement and Proposed Solution

To anticipate the demand of medical supplies we are proposing a solution where we analyze the population for the diseases and then keep the stock of the medical supplies required to treat the disease in the nearest pharmacy/ warehouse

Data - 2016 to 2018

- For making the prototype of the project we are currently taking the data of the Dengue Disease Incidence from two Counties of Texas - Collin and Tarrant

- Each of the data is taken from a CSV file and preprocessed to get the count of dengue cases for each County per month from - 2016 to 2018

Forecasting the Data for 2019

From the data we created a time series and fitted the data using an ARIMA model

- Based on the results obtained from the model we calculated the difference between the forecasted values of Collin County and Tarrant County and determined the place with highest forecasted incidence of dengue cases
- Based on the incidence of the dengue cases we determined which county's warehouse can stock up the resources.
- Scaling up our prediction model, we can find the areas with more diseases and regress the model to find locations where our current distribution system cannot fulfill demands and so we can build new distribution center on that particular location by following supply chain design principles.

Future Scope

- We can scale this project to include populations from multiple regions
- Currently the prediction is done only based on the Dengue Disease, but this can be scaled to include more wider set of diseases.
- With the results of Regression and Prediction model we can plan of starting new distribution system which can cater the upcoming needs which cannot be met by our current 37 distribution centers.