

MSDS 7333 Spring 2021: Case Study 04

Influenza forecast

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Introduction

Influenza most commonly known as **flu** is an infectious respiratory disease caused by virus. Virus was named as influenza and exist in four different types. Type A , Type B, Type C and Type D. Based on historical data it occurs in winter or in monsoon season. There several studies have been conducted on the causes of occurring in the specific season and one of the study has linked it to vitamin D levels in human ^[1]. It's during winter or rainy season when people stay mostly indoors and are less expose to sun and levels of vitamin D falls. Staying inside homes has also been seen as one of the reason of transmission the disease as people are in close contact of each other. That explains a bit of seasonal occurrence of the flu every year. These viruses infect nose, throat and lungs and leads to mild to severe illness and has been observed that it can also lead to death of proper attention is not given.

Data shows that globally on an average 389K deaths occurs due to flu and it mostly affect people who are above 60 years of age^[2]. In the United States alone more than 200K hospitalization are due to Influenza every year^[3]. **Centers for Disease Control and Prevention** has reported range of death is between 3500 and 49K every year^[4]. Out of many strains of the viruses few have potential to create pandemics/epidemics. One the deadliest pandemic occurred in year 1918 which infected 33% of world population and caused 100 million deaths worldwide. Other than that it has been observed that Pandemic occurs 3 times in century.

Business Understanding

Data Extraction & Evaluation

Modeling Building

Forecasting

Conclusions

References

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