DAB 304 HEALTHCARE ANALYTICS: PROJECT PROPOSAL

Group Name – Wellness Revolution

Introduction:

When you're a patient in Canada the first thing that comes to your mind is how long will you have to wait for your turn to get treated. It's no secret that Canadians often face longer wait times for medical procedures than patients in other developed countries. In fact, a recent study found that Canadians wait an average of 19.8 weeks for medically necessary treatments – that's more than 4 months!

In this project we want to focus on top priority treatments, because we know it is unfeasible to simultaneously improve wait times for all treatments. We will be identifying and focusing on priority treatments of patients who suffer from various types of Cancer and include other treatments such as Cardiac care and joint replacement, to name a few. Multiple projects already exist which focus on identifying wait time patterns, but what we want to identify is the wait time difference and improvement in provinces across Canada for our identified top treatments. A deeper analysis will be done comparing pre-covid and post-covid wait times and its improvements and multiple dashboards will be presented to give insights into our findings.

This project will serve as a data resource and insight tool for this course, which focuses on identifying the latest wait time patterns and comparing its improvement across Canada.

Motivation:

This project was the product of a brainstorming session our group had for a few days. After discussing multiple avenues to indulge ourselves into, we decided that research into wait time analysis of severe treatments pre and post Covid would be a good start and eventually decided to create an exploratory project focusing on that topic.

DAB 304 HEALTHCARE ANALYTICS: PROJECT PROPOSAL

There are several reasons why hospital wait times in Canada are a problem.

- First, they can cause needless suffering for patients who are in pain or who have chronic conditions that could be effectively treated if they could just see a specialist.
- Second, long wait times can lead to worse health outcomes, as conditions can worsen while patients are waiting for treatment.
- Finally, hospital wait times are a huge financial burden on the healthcare system, as patients who are waiting for treatment often end up using more expensive emergency care services.

These are just some of the problems we want to focus on and help improve by identifying multiple trends in the dataset.

Evaluation:

From the data on the wait time procedures of Canada from the year 2008 to 2021, we want to classify them into two groups, pre-pandemic and post-pandemic to have more insights about the change or improvement in wait time. These are the milestones we wish to achieve:

- We aim to analyze waiting times (in days) at the hospital by province with respect to pre-pandemic and post-pandemic.
- We aim to analyze and see trends in the number of cases of specific treatment by top province-wise before COVID-19 and after COVID-19.
- Looking to improve the waiting time for cancer treatment, and cardiac treatment, diagnostic imaging, joint replacement at the hospital by interpreting the behavior of the data and representing it in a visualization to provide solutions for it.

Success in these measures will be defined by reducing wait time to acquire a priority medication for a patient. Measuring and analyzing of waiting time for priority procedures across Canada is the way to improves quality of hospital services. This data is mainly focused on the pre- and post-pandemic

DAB 304 HEALTHCARE ANALYTICS: PROJECT PROPOSAL

medication services provided by the hospital with respect to the service time. There are various factors which are responsible for longer wait times in each province for priority treatments such as surgery, diagnostic imaging, and other procedures. Using data analytics techniques on this data, we can identify possible major factors and medical services which should consider as the most prioritize one and we aim to reduce the waiting time for those services.

Achieving all these milestones will ensure that our project is completely successfully.

Resources: Wait Time Meta dataset; Other web resources.

Tools: Microsoft Excel**,** Tableau**,** SQL (If required)

Group Members & Contributions:

1. **Pramit Parikh (0801037)** – Dataset Research, Introduction, Evaluation
2. **Amir Dahya (0791252)** – Dataset Research, Motivation
3. **Devkumar Patel (0787429)** – Dataset Research, Evaluation
4. **Miloni Patel (0788500)** – Resources, motivation, dataset research
5. **Kawalbeer Kaur (0794161)** – Dataset Research, identify multiple tools, editing and document preparation.

References –

1. **Web Research - https://www.qminder.com/blog/queue-management/canada-long-hospital-wait-times/**
2. **Dataset Metadata - https://www.cihi.ca/en/wait-time-metadata**
3. **Dataset Research - https://www.kaggle.com/code/chelsealee14/eliminating-the-wait-time-from-hospitals**
4. **Dataset Research - https://open.canada.ca/data/en/dataset/80f742f4-6b75-4031-8752-1c688783e9a6**