**Battle Of Healthcare Accessibility**

**between**

**Toronto and New York City**

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**INTRODUCTION:**

Each year, both the U.S and Canada invest a lot of money in their healthcare systems with the goal to achieve better patient health outcomes. Despite the cultural similarity, there is a distinct difference in the healthcare system between the two countries. Concretely, Canada advocates a single-payer system where the government is the only entity paying for the healthcare coverage, whereas in the U.S, most healthcare facilities are private and operate on a multi-payer system. Even though they each offers its own pros and cons, many researches have suggested that Canada has a more superior healthcare system in terms of two common health outcome measures, the infant mortality rate and life expectancy. Additionally, Canada spends 10.4% of its GDP on healthcare in comparison to the 16% spent by the U.S. It seems conspicuous that the Canadian system is doing more for less. Therefore, it would be of a special interest to the U.S politicians to determine if the single-payer system is a potential alternative to adopt. In the project, I will be looking at the healthcare accessibility of healthcare facilities in both countries, which could indirectly reflect the performance of a country’s healthcare system. More specifically, a longer wait time can result in unmet medical needs, which is an indicator of potential deficiency in healthcare resources. Finally, as a Torontonian, I will analyze the distribution of healthcare resources in Toronto. I hope the result can assist physicians in determining the best location to open a healthcare facilities.

**DATA:**

In this section, I will discuss the data and sources I will utilize for this analysis. First of all, I will narrow down the targets from a national level to a municipal level - Toronto and New York City. Precisely, while the healthcare system in these two cities might not best represent their own countries (Intuitively, Toronto and New York City would likely have more healthcare practitioners than Phoenix and Winnipeg, thus can offer greater accessibilities), both cities are similar in many other aspects. For instance, both Toronto and New York City have a large yet diverse population, and are the financial capital of their respective countries. Therefore, Toronto and New York City are selected for the purpose of this comparison.

For the first part of this project, I will be using the location data provided by Foursquare. Concretely, Foursquare provides a list of venue categories with their unique category ID. And in this case, I will be using the category ’Medical Center’ because I am interested in locating all healthcare related facilities in a specified neighborhood. Furthermore, the ‘Medical Center’ category encapsulates several sub-categories, such as ‘Dentist’s Office’, ‘Emergency Room’, ‘Mental Health Office’, ‘Rehab Center’, etc. (a complete list can be found on [here](https://developer.foursquare.com/docs/resources/categories)). This information along with other venue information will be helpful in determining the ideal neighborhood for opening different types of healthcare facilities.

Other datasets that I will be using are the demographic data from the neighborhoods of Toronto and New York City. The dataset should contain both the location and population data. This information can be found on City of Toronto’s Open Data Catalogue [website](https://www.toronto.ca/city-government/data-research-maps/open-data/open-data-catalogue/#8c732154-5012-9afe-d0cd-ba3ffc813d5a) and New York City’s OpenData [website](https://data.cityofnewyork.us/City-Government/New-York-City-Population-By-Neighborhood-Tabulatio/swpk-hqdp). Both datasets contain the population data for each neighborhood of the respective city. As mentioned earlier, one aspect of accessibility is wait time. While there is no reliable data on wait time, one alternative is to calculate the healthcare facilities per capita using the population count and healthcare facilities count in a neighborhood. This would roughly translate the accessibility.