Covid-19 Data Analysis

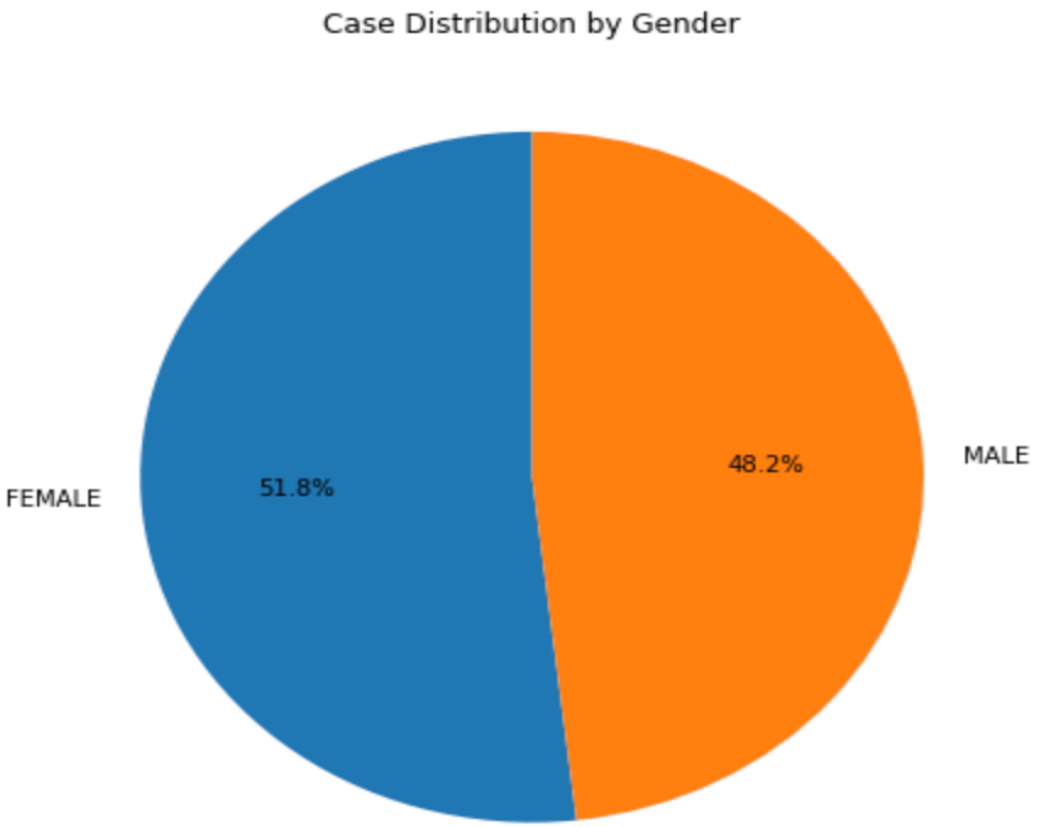
Report By: Sushant Batra

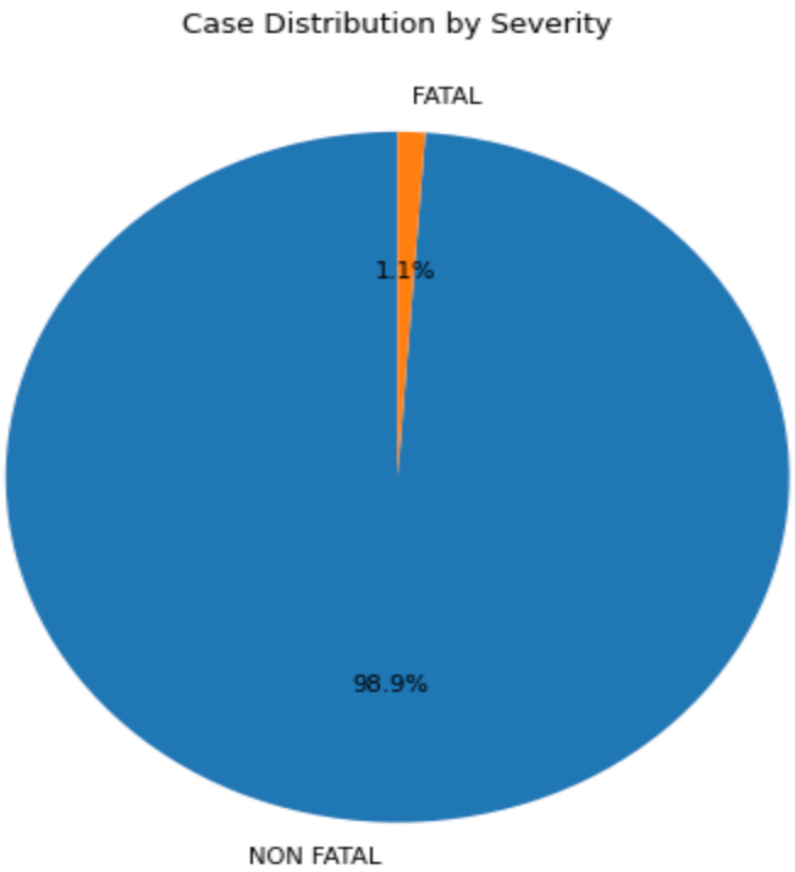
Executive Summary – Covid-19 Cases Analysis

- For the analysis Confirmed positive cases of COVID-19 in Ontario dataset is used.
- The dataset covers a broad range of age groups, from "<20" to "90+," with cases distributed across the groups Male and Females. There are instances of "GENDER DIVERSE" and "UNSPECIFIED" categories, which may require further investigation or clarification.
- Most cases in the dataset fall under the "NON-FATAL" category, indicating that most reported cases do not result in fatalities. "FATAL" cases are present across different age groups and genders but are generally less frequent compared to "NON-FATAL" cases.
- The highest number of cases, both "FATAL" and "NON-FATAL," is reported in the "80s" and "70s" age groups, followed by the "60s." The "<20" age group also has a significant number of cases, primarily "NON-FATAL," indicating that individuals in this age group are affected by the reported incidents.
- Both males and females are affected by the reported cases across all age groups. In most age groups, the number of "FATAL" cases is lower compared to "NON-FATAL" cases, suggesting that most cases do not result in fatalities.
- Also, there are 35 cities of Ontario in the dataset with Confirmed Covid19 cases with Toronto being the one with the highest number of confirmed cases followed by Mississauga and Thunder Bay.

Source: Ontario Data Catalogue | Analysis based on Case Reported Date

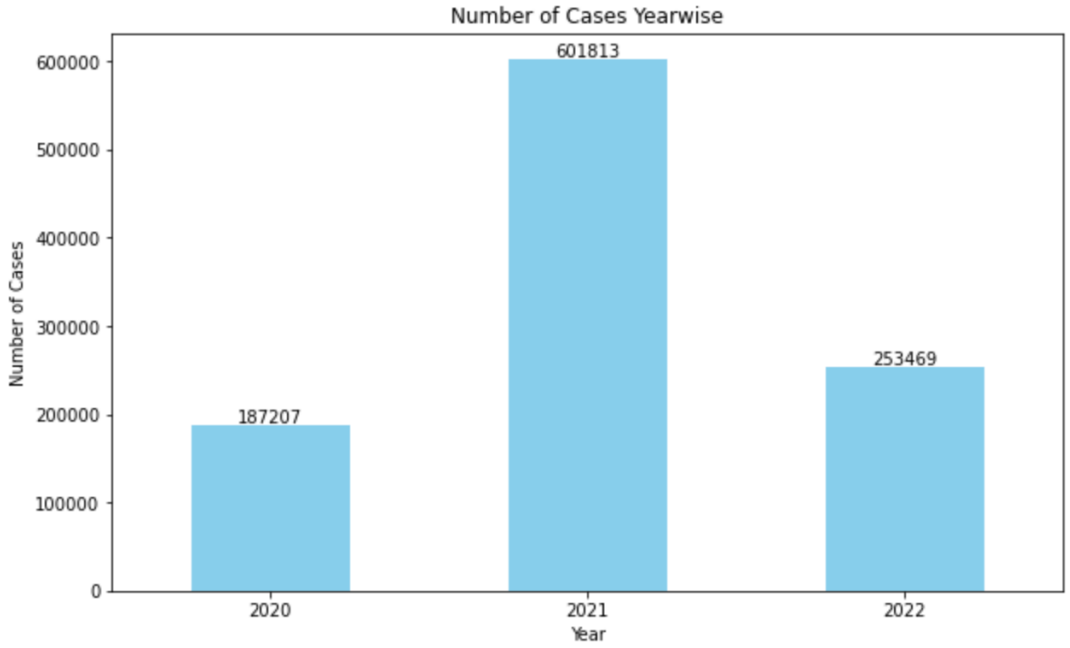
Cases based on Gender and Severity | The split of male and female cases is similar, however most cases in Ontario have been Non-fatal



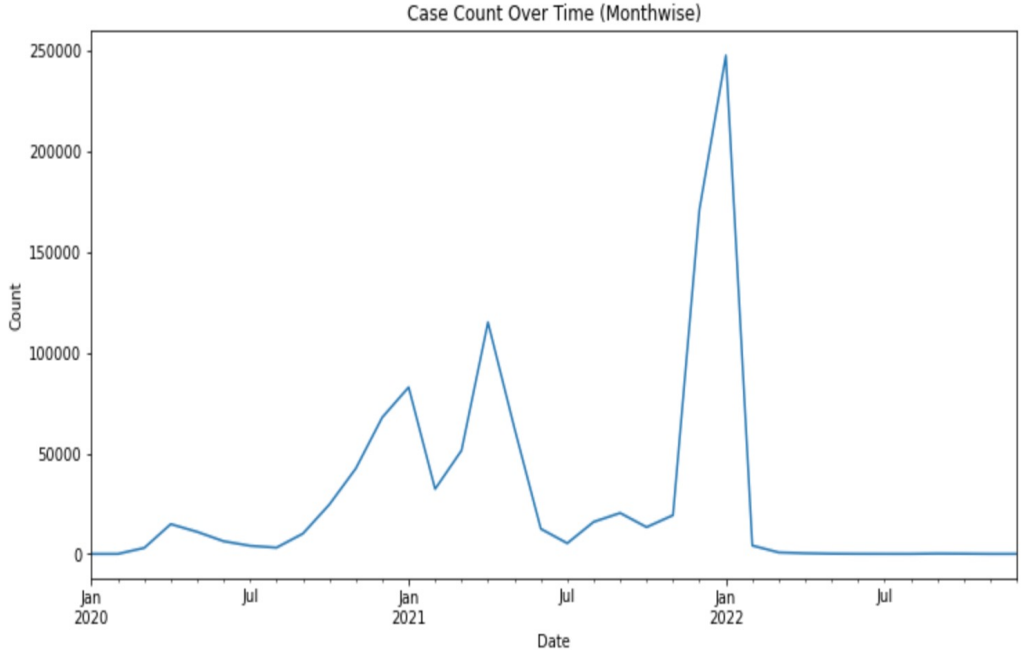


Source: Ontario Data Catalogue | Analysis based on Case Reported Date

Time Series Analysis (Yearly and Monthly)



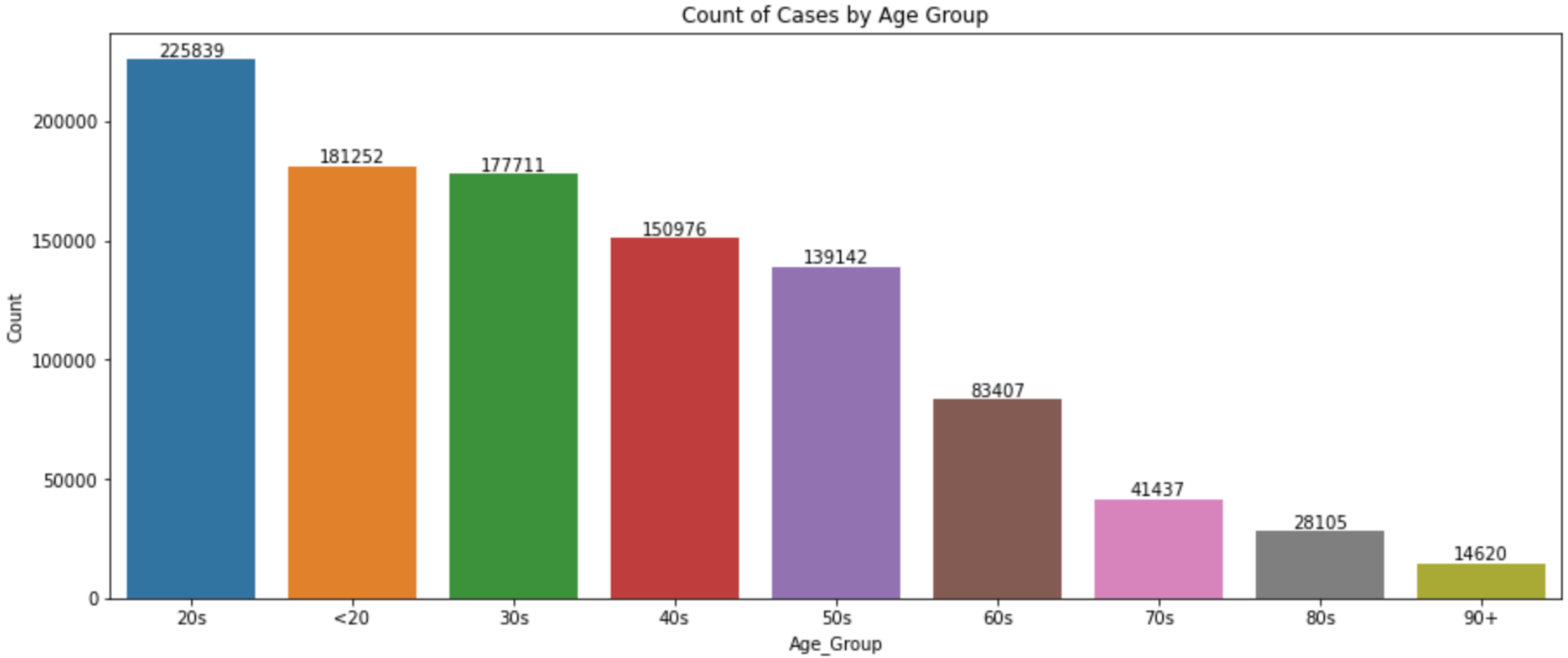
2021 being the prime year of Covid-19 has the maximum number of cases with a drastic slip of cases in 2022



As we notice the timeline, the high point of cases in Ontario was reached in Jan 2022, however the cases were spread across all of 2021

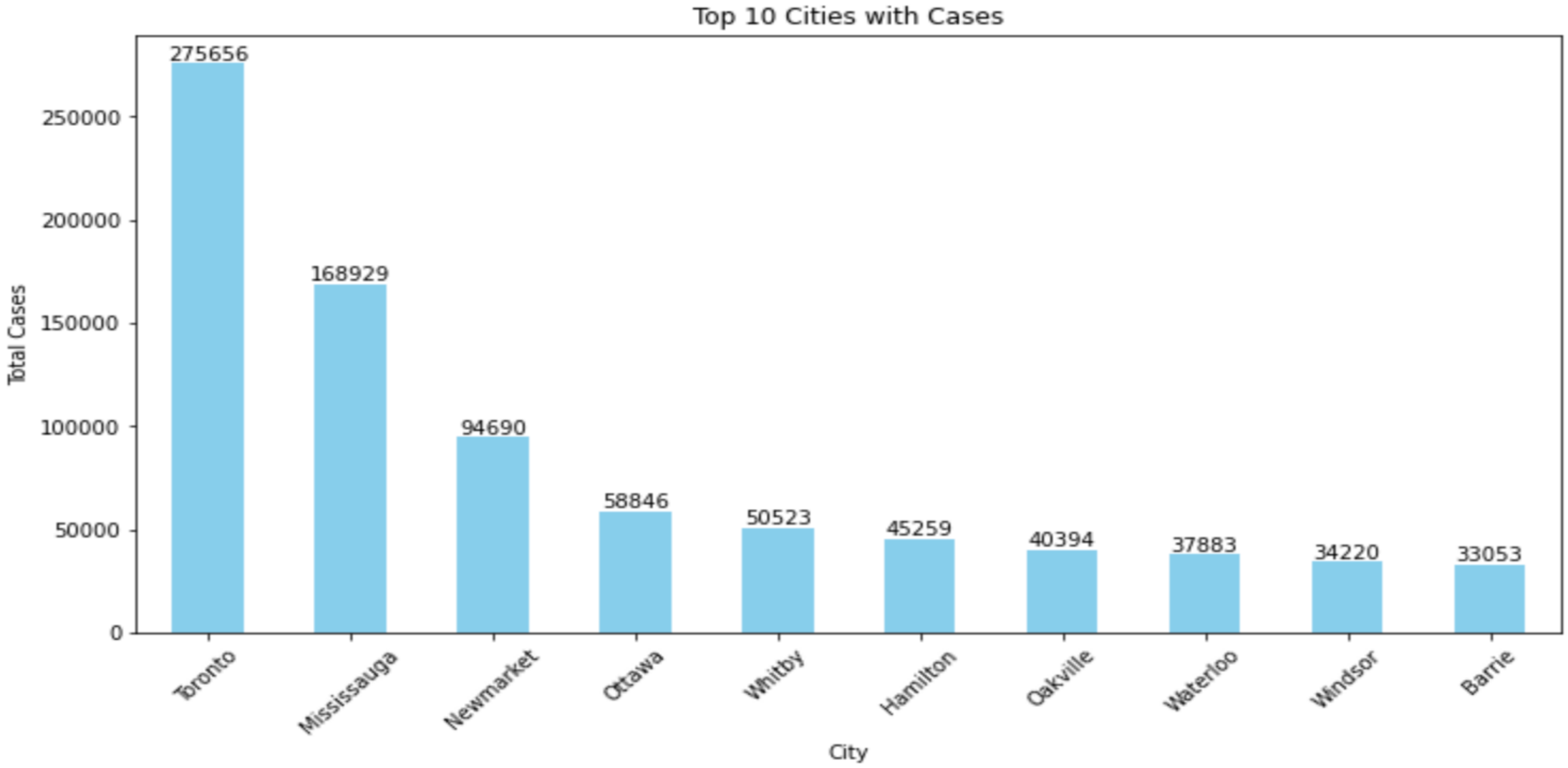
Source: Ontario Data Catalogue | Analysis based on Case Reported Date

Cases by Age Group | The number of cases reflect the share of population of each age group; mostly spread to the left of the graph



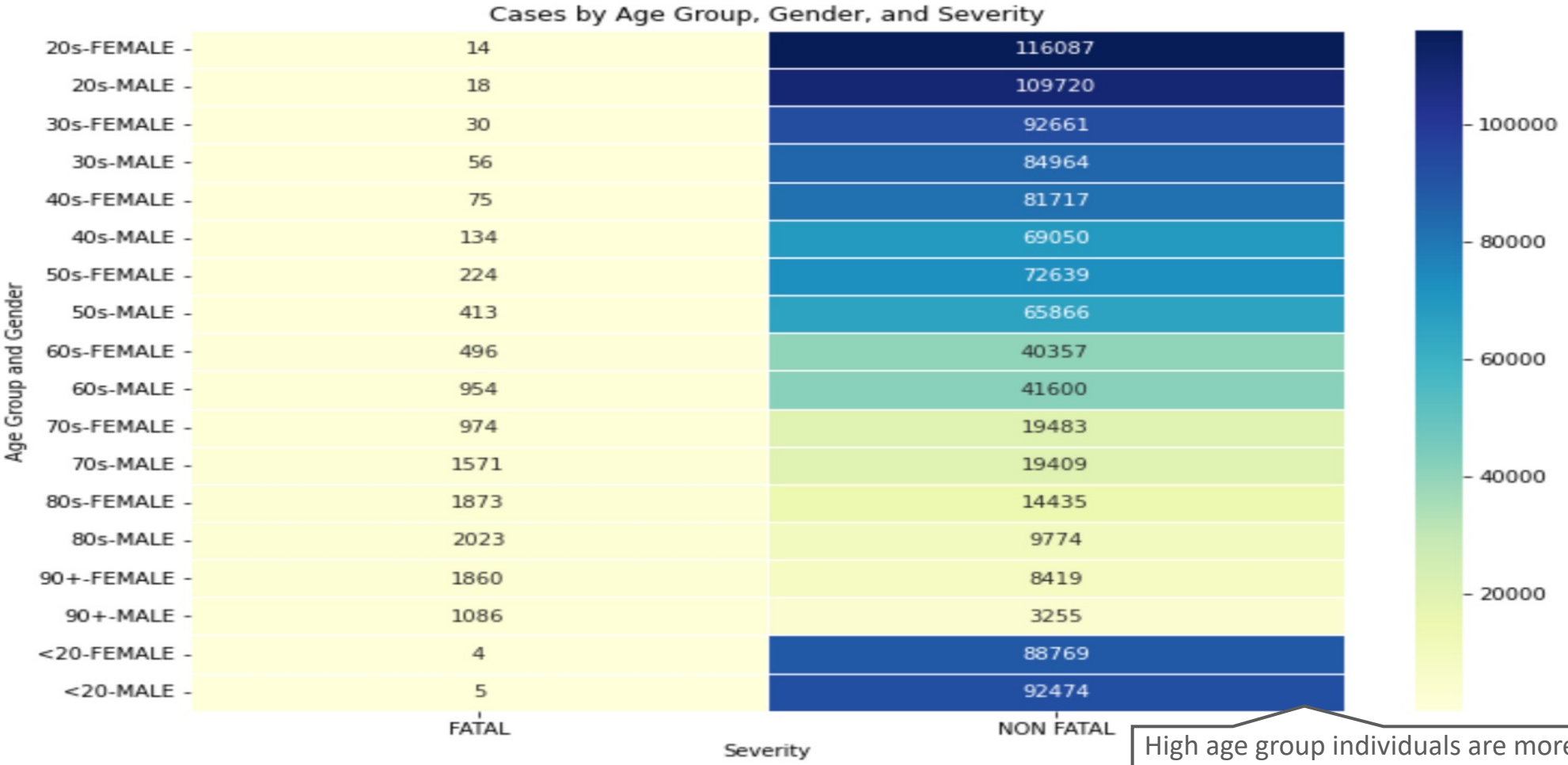
Source: Ontario Data Catalogue | Analysis based on Case Reported Date

Top 10 Cities | Toronto being the most populated city therefore has the highest number of reported cases followed by others



Source: Ontario Data Catalogue | Analysis based on Case Reported Date

The heat map helps identify the split of cases by gender and age group, along with severity



High age group individuals are more prone to fatal cases, however, younger individuals with their share of population in Ontario had higher number of non-fatal cases

Source: Ontario Data Catalogue | Analysis based on Case Reported Date

Executive Summary – Covid-19 Vaccination Analysis

- For the analysis COVID-19 Vaccine data by Public Health Unit (PHU) and by age dataset is used.
- **78%** individuals in Ontario are **fully vaccinated**; **81%** are vaccinated with first dose

➔ Vaccination Rates by Age Group:

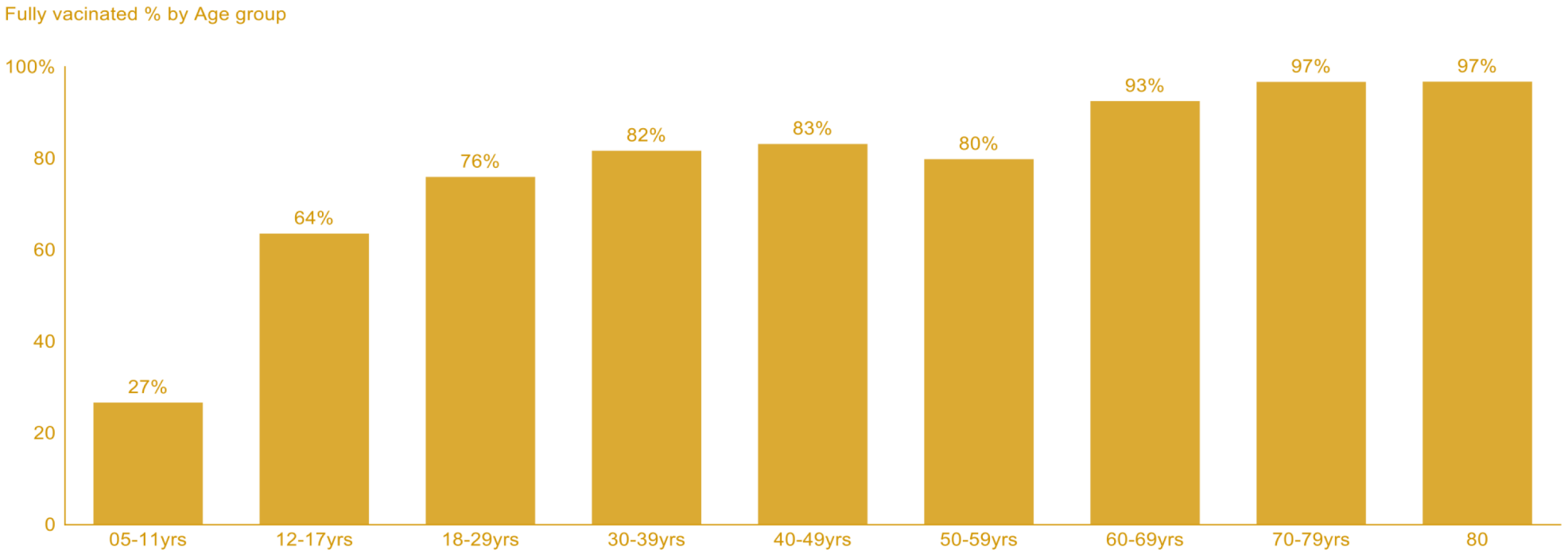
- The highest average percentage of individuals with at least one dose is in the 70-79 years and 80+ age groups, both at 97%. The lowest average percentage is in the 05-11 years age group at 40%, reflecting the vaccination eligibility age.
- The highest average percentage of fully vaccinated individuals is in the 70-79 years and 80+ age groups, both at 97%. The 12-17 years age group has a notable 64% fully vaccinated rate, which is encouraging given the recent eligibility expansion.

➔ Vaccination Rates by PHU:

- PHUs with higher average percentages for at least one dose include City of Ottawa (84%), Halton Region (83%), and Toronto (83%).PHUs with lower average percentages for at least one dose include Grey Bruce (73%), Haldimand-Norfolk (72%), and Southwestern (75%).
- City of Ottawa, Toronto, and Halton Region have higher average percentages of fully vaccinated individuals, with 81% or higher. PHUs with lower average percentages of fully vaccinated individuals include Grey Bruce (70%), Haldimand-Norfolk (70%), and Renfrew County and District (71%).
- The Grand Total for all PHUs in Ontario indicates an average of 77% for at least one dose and 74% fully vaccinated, reflecting the overall progress in vaccination efforts across the province and all age groups.

Source: Ontario Data Catalogue

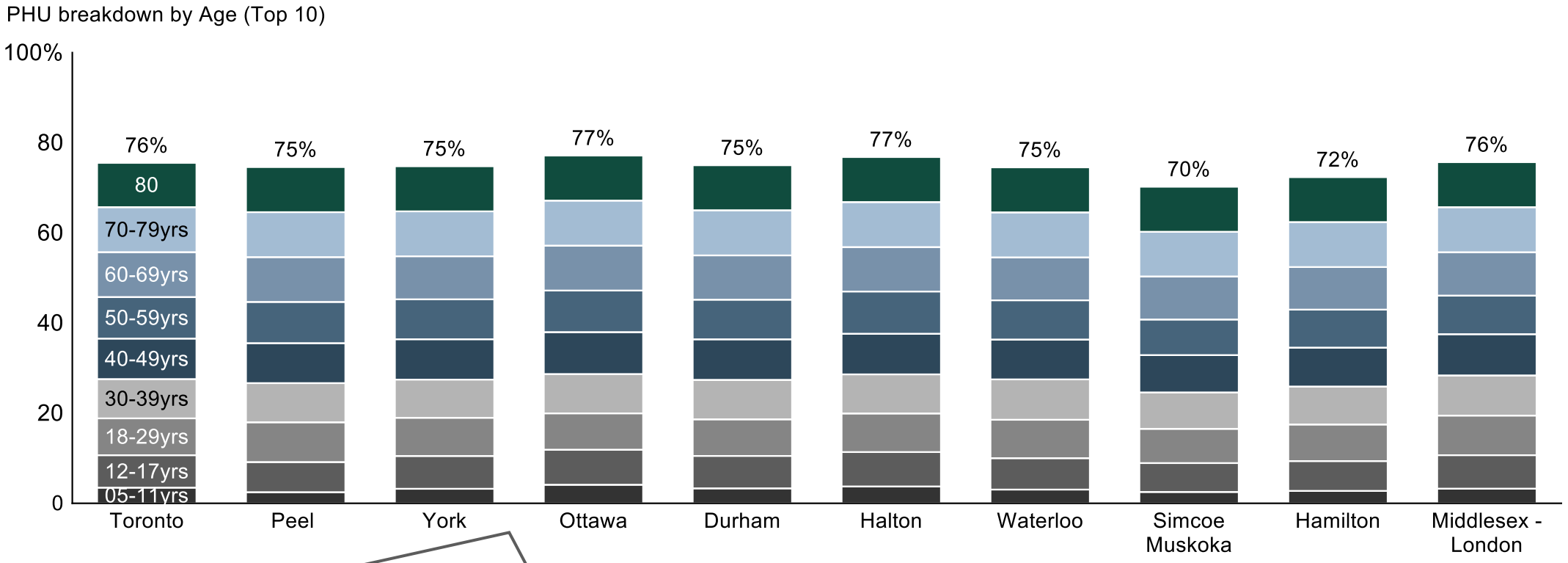
Vaccination by Age Group | The vaccination % numbers are a clear reflection of the eligibility and timeframe of the vaccination process



The vaccination process opened for senior citizens first, reflecting high % numbers there as compared to the 5-11 age group, where the medical eligibility came by later in 2021

Source: Ontario Data Catalogue

PHU's grouped by Age | Similar split across age groups for most PHUs maintaining that ~74% individuals in Ontario are fully vaccinated



From the highest populated PHUs in Ontario, the average fully vaccinated percentage is ~75%, however, if we look at all 35 PHUs available to us in the data set, most are above average except few : Grey Bruce, Haldimand-Norfolk,

Source: Ontario Data Catalogue

THANK YOU