Decreasing Prevalence of COVID-19 Cases in Toronto*

Denise Chang

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The coronavirus disease, better known as COVID-19, is an infectious disease that first emerged in 2019, soon resulting in a global pandemic half a year later. This study aims to investigate the trends in COVID-19 cases in the City of Toronto from 2020 to 2023, as well as the severity of each of these cases. Based on the exploration of the number of reported cases, the number of cases who were hospitalized and the number of cases who were sent to the ICU, there is strong evidence support the hypothesis that the coronavirus disease is no longer a major threat to society as is was during the peak of the pandemic. The results of this study is significant, as it impacts the future directions of COVID-19 regulations for businesses, schools and governmental institutions.

1 Introduction

The coronavirus disease, also commonly referred to as COVID-19, is a contagious disease which first emerged in late 2019 (Public Health Ontario 2024). Due to the scale of the coronavirus outbreak and its rapid international transmission rate, the World's Health Organization (WHO) characterized it to be a global pandemic and a public health emergency of international on concern (PHEIC) on March 11th 2020 (World Health Organization 2020). This statement urged national leaders to begin formulating a response plan, including but not limited to masking restrictions and mandatory vaccination policies to limit the spread of the virus. However, in early 2022, despite the ongoing PHEIC, the province of Ontario announced they would lift all COVID-19 related by the end of April 2022 (Fox 2022). This announcement was welcomed with skepticism as the public was still not convinced about the safety of lifting these regulations (Dunn 2022).

*Code and data supporting this analysis are available at: https://github.com/DeniseChang9/Covid-19_Cases.git

One of the ways to evaluate the safety of lifting COVID-19 regulations as well as its effectiveness would be to look at the number of cases of COVID-19 and the severity of each case for the years surrounding the loosening of regulations. In this paper I take a particular interest in the data surrounding the reported cases of COVID-19 in the city of Toronto from 2020 to 2023. I estimate the transmission rate of the disease during the pandemic by evaluating the number of cases reported by month. The severity of each case is evaluated by compiling the number of patients who were hospitalized and sent to the intensive care unit (ICU) during their confirmed episode of sickness. (I find that the number of reported COVID-19 cases were already decreasing by the time Ontario announced they would lift all COVID-19 related regulations, and that the cases kept decreasing after they were lifted. The severity of the cases, however rose after the regulations were lifted.)?

2 Data

3 Results

4 Discussion

5 Conclusion

References

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