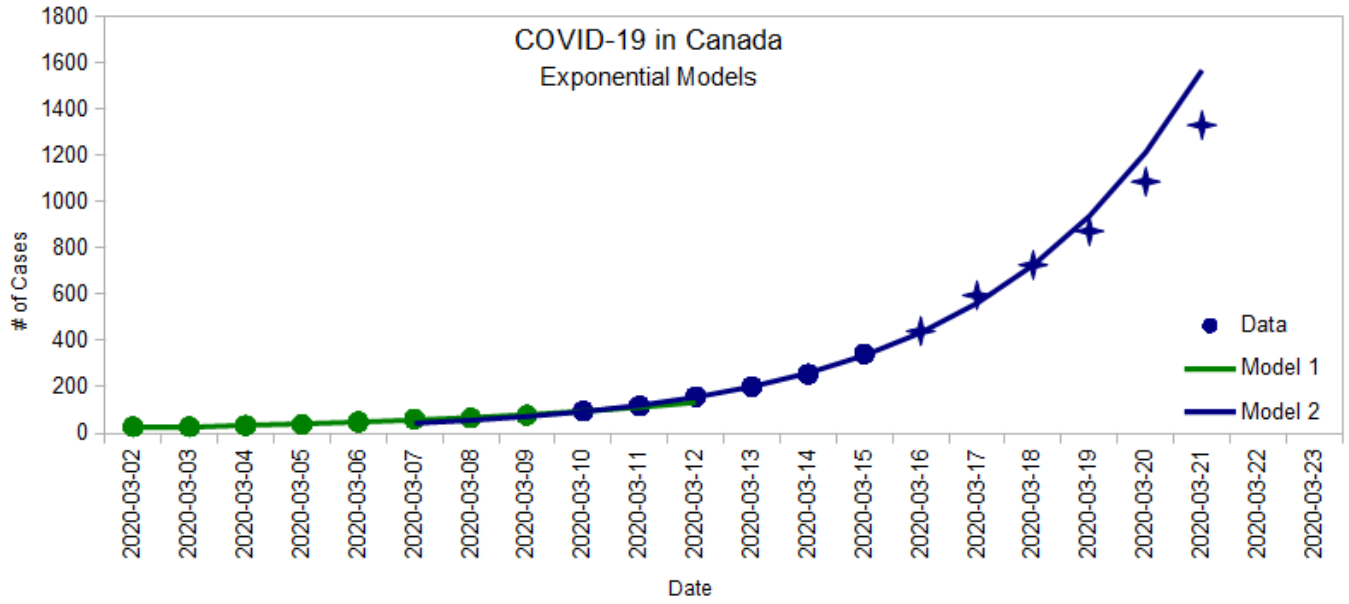
COVID-19 Spread

I'm not an epidemiologist, doctor, or any kind of expert on the subject so take this with a grain of salt.

One of the key messages from today's PM announcement is that things will get worse before they get better. I wanted to have a sense of the rate at which COVID-19 is spreading in Canada, so I made a graph, and did some math.

First, I got the data from https://www.covid-19canada.com, plotted it on a graph, and tried to use a basic exponential modem to extract some basic information.



Date	Count
2020-03-02	27
2020-03-03	27
2020-03-04	33
2020-03-05	37
2020-03-06	48
2020-03-07	60
2020-03-08	64
2020-03-09	77
2020-03-10	95
2020-03-11	117
2020-03-12	157
2020-03-13	201
2020-03-14	254
2020-03-15	342

From what I can see, there's two different patterns in this two week period:

1. Between March 2 and March 10 (ish) (green line), the number of cases was doubling every 4.1 days
2. Between March 10 (ish) and now (blue line), the number of cases is doubling every 2.7 days

For those interested, the formulae for the exponential curves are:

- $$24.5 \times 2^{(\frac{t}{4.1})}$$ for the green line (where *t* is the number of days since March 2)
- $$93.1 \times 2^{(\frac{t}{2.7})}$$ for the green line (where *t* is the number of days since March 10)