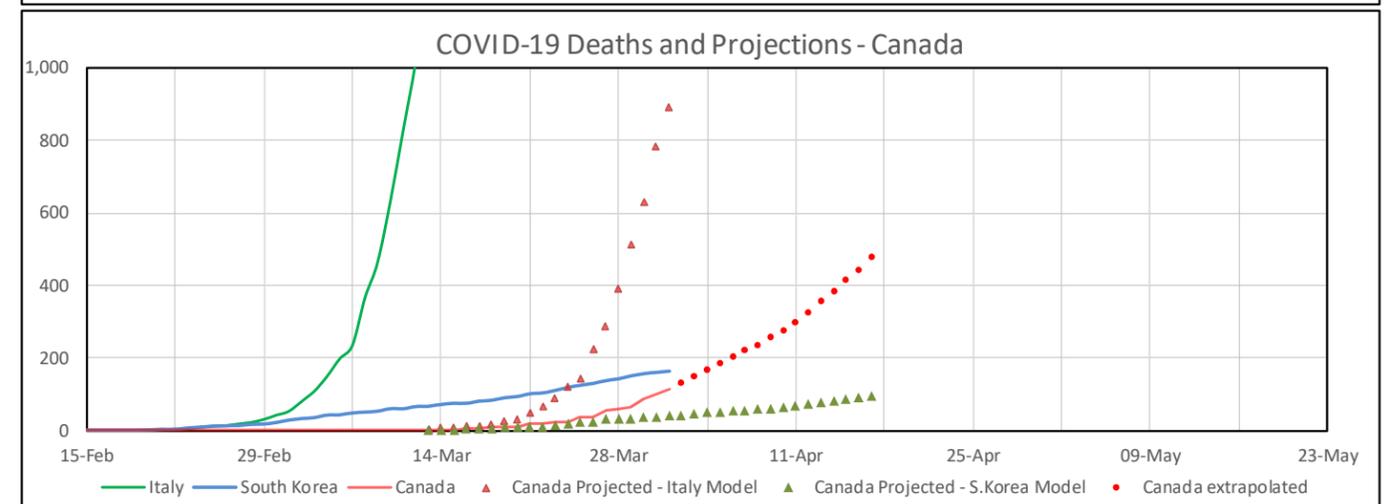
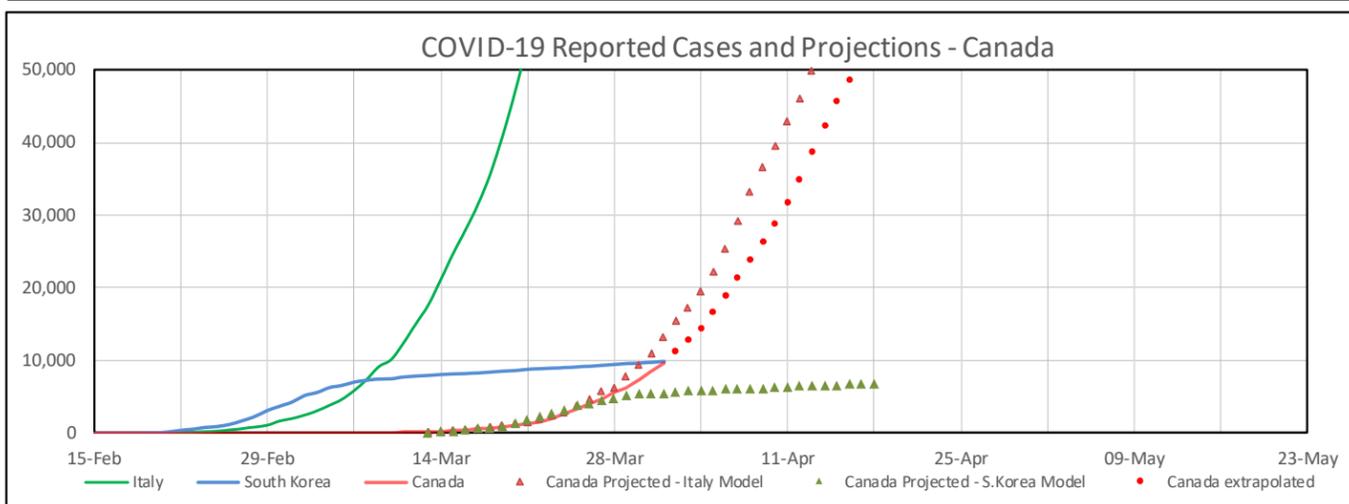
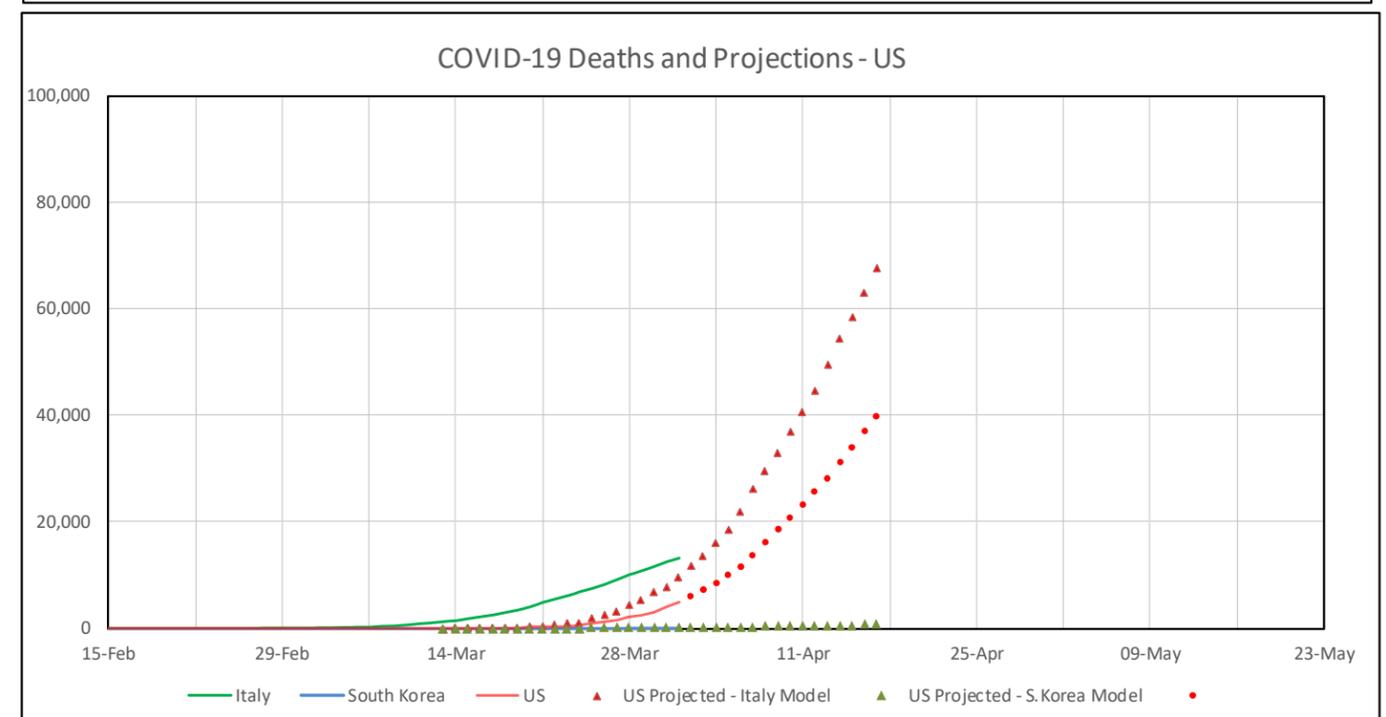
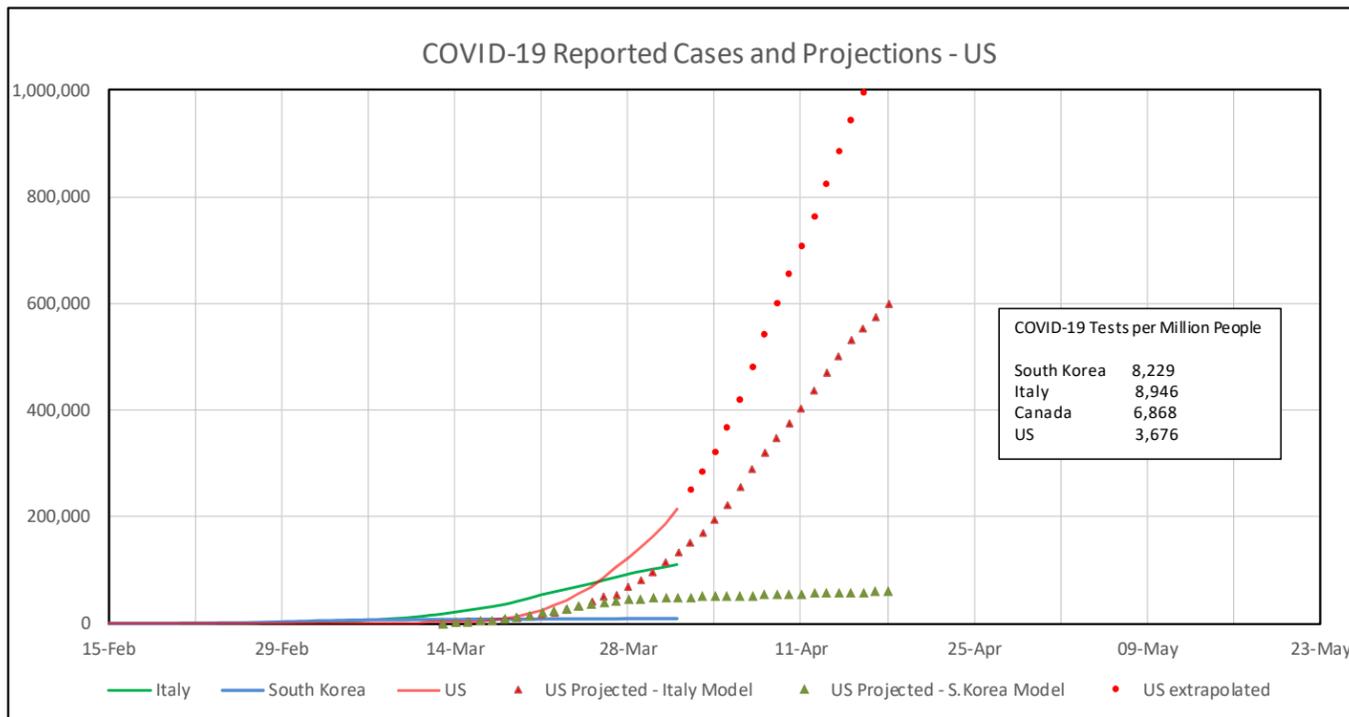
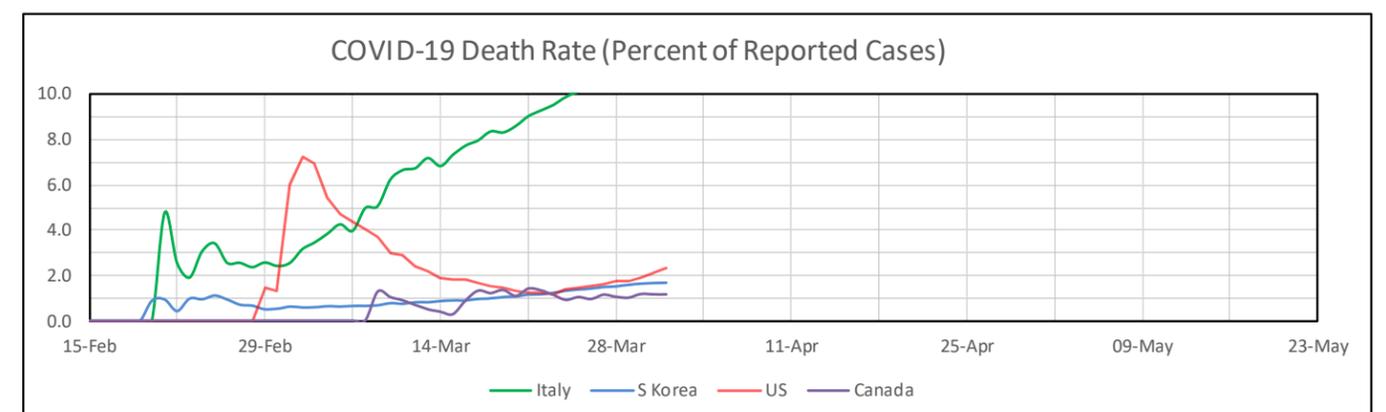
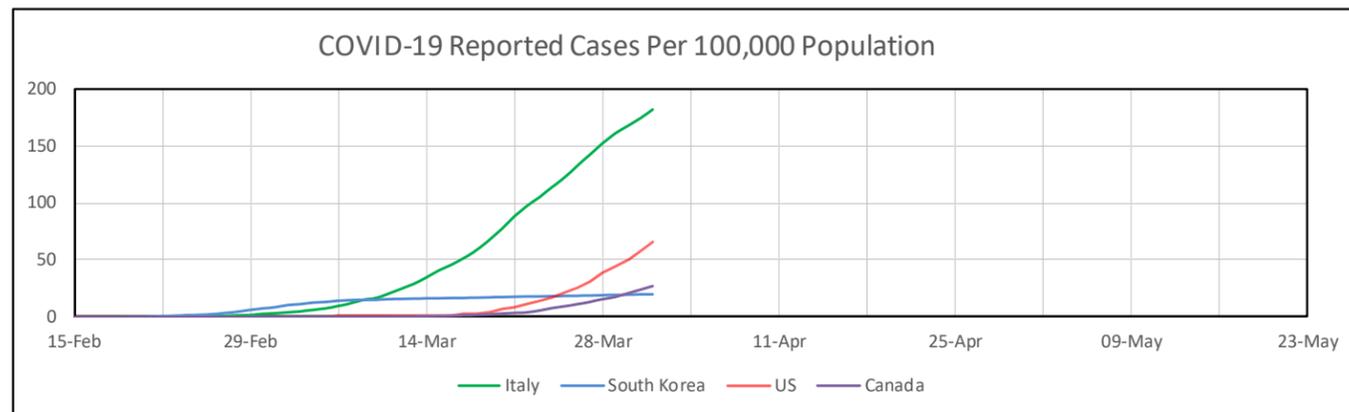


COVID-19 Observations – 2 April 2020 – by Alex Harrington



Here we are again and things are not looking good. Our charts are above - on the left we have reported cases – the top shows cases per million population and the bottom two show reported cases for the US and Canada respectively. On the right we have the data for deaths - as a percent of reported cases on the top, and actual deaths from the US and Canada, respectively below that. I've removed the event labels – they're history and of little importance now but they're still on the old charts if you want them.

The cases per 100,000 population (top left) show both Canada and the US rising, but the US is at double the rate of Canada. This indicates that the late start to self isolation in the US (and some areas still haven't started) has allowed the virus to spread further into the population. It's also partly to do with testing since we're testing a lot of people who show symptoms so there will be a high case count ratio.

In Canada the cases continue to increase (bottom left chart). The data are trending below but similar to the Italy Model. We hear of flattening the curve – that means getting things to the right of the Italy Model line and over to the Korea Model line (the red and green triangles). We've pulled a little bit away from the Italy Model line but not enough for the curve to flatten as it does with the Korea Model line. I've added a new set of data – the red circles – they show the current trend extrapolated for a couple of weeks. This estimate shows that we are not yet close to flattening the curve. That's why restrictions are getting tightened and it's even more important to self isolate.

The US case count continues its upward climb (centre left chart). The curve is nowhere near flattening and the extrapolation I've added (red dots) show the US will reach a million cases in two weeks if this trend continues. Given the number of states that refuse to impose restrictive measures and the late start in those that did, this estimate could be a best case scenario and things could get even worse.

The data for deaths are on the right. The top right chart shows the death rate as a percent of reported cases. Canada is hovering around the one percent level while the US is approaching three percent.

In Canada (bottom right chart) the number of deaths is climbing, but at a rate closer to the South Korea Model. At the current rate, extrapolation shows we could approach 500 deaths in two weeks. The US deaths are climbing more rapidly, and at current rates could approach 40,000 in two weeks. This is in line with all the numbers we hear on the US news. They're now talking about 100,000 or more deaths – that's still several weeks away and I just don't have a fancy enough model that I want to project that far ahead. But they certainly seem to be going that way.

Obviously I hope I'm wrong about a lot of these future predictions – they're pretty depressing. We'll find out in time.

Testing information is on the centre left chart. Testing per million population has increased 535 for South Korea, 1,445 for Italy, 1,243 for Canada and 950 for the US since the update on March 29. This represents about 15,000 per day for Canada and 100,000 tests per day for the US.

In Canada, Ontario's testing is still lagging. From what I can tell, with 40% of the population, Ontario is doing about 25% of the testing per capita. And you still have to have symptoms to get tested. So from the time you feel crappy give a day or two to get in for testing and at least three days to get results, you're a week into being sick before you're confirmed. And this after the Ontario government appears to be near its goal of 5,000 tests per day. This is barely enough to keep up with what we know is coming, let alone launch any kind of pro-active testing and planning program. We have no idea of how many cases are out there or where they are.

But there is some good news – serious progress is being made by a Canadian company on a test capable of having results in about 30 minutes. Just have to hope government involvement doesn't ensure it never sees the light of day – totally possible in this country.

We are just about to enter a new and tougher part of this pandemic when health care systems start to reach their limits. It's hard to find data for capacity of the health care system so I just have to go with the case counts and death rates.

So April is a write off, and probably longer – some accounts predict into July. So best find something to do while we go through this self isolation – one day it will be over and maybe you can come out of it with something to show for it. I've dug out my old drum sticks and practice pad. It's been over 50 years since I've played anything (a brief period of embarrassment 25 years ago but that doesn't count) so I'm going to see what happens if I practice. Never practiced before – that was for everyone else. Maybe that's why my professional career was so short.

Here are some more resources for you. Thanks to all who have sent me info. The COVID 19 self assessment is here <https://covid-19.ontario.ca/self-assessment/#q0>. Some general info for Ontario is here <https://covid-19.ontario.ca/>.

The fed's web site <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html> has some good info, including a link that let's you check your exposure on recent flights <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/latest-travel-health-advice/exposure-flights-cruise-ships-mass-gatherings.html#wb-auto-6>

And for those of you who are into numbers, the University of Washington has a good model that's used in the stuff you see on CNN etc. You can see it here <https://covid19.healthdata.org/projections>.

Take care of yourselves and don't endanger others.