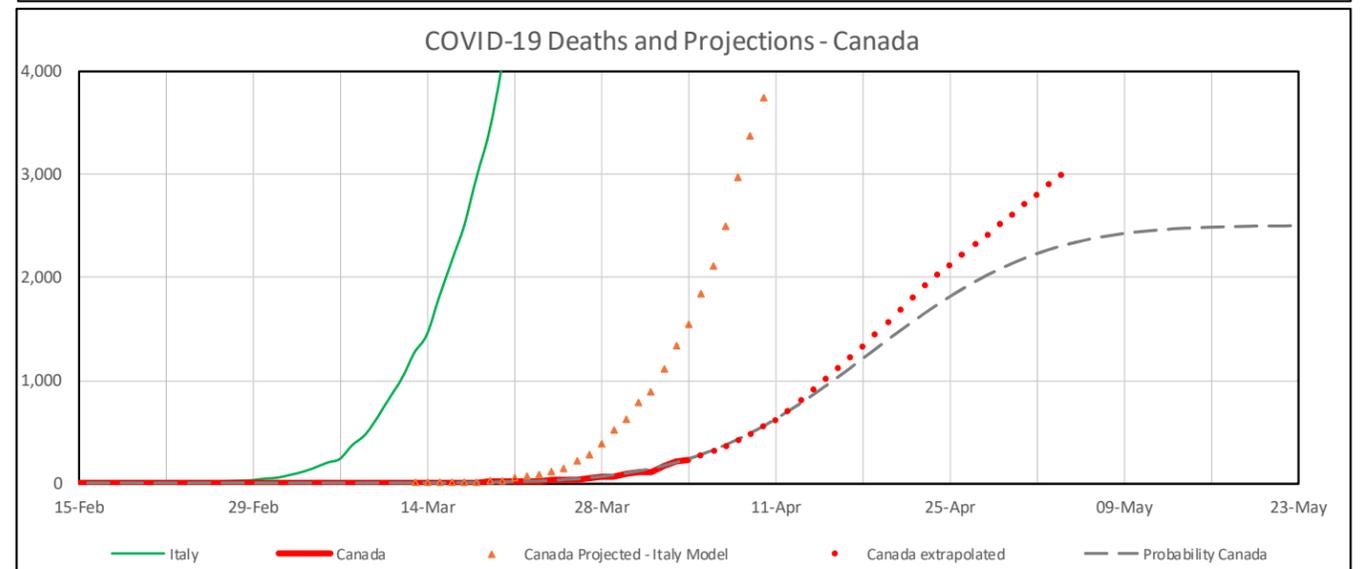
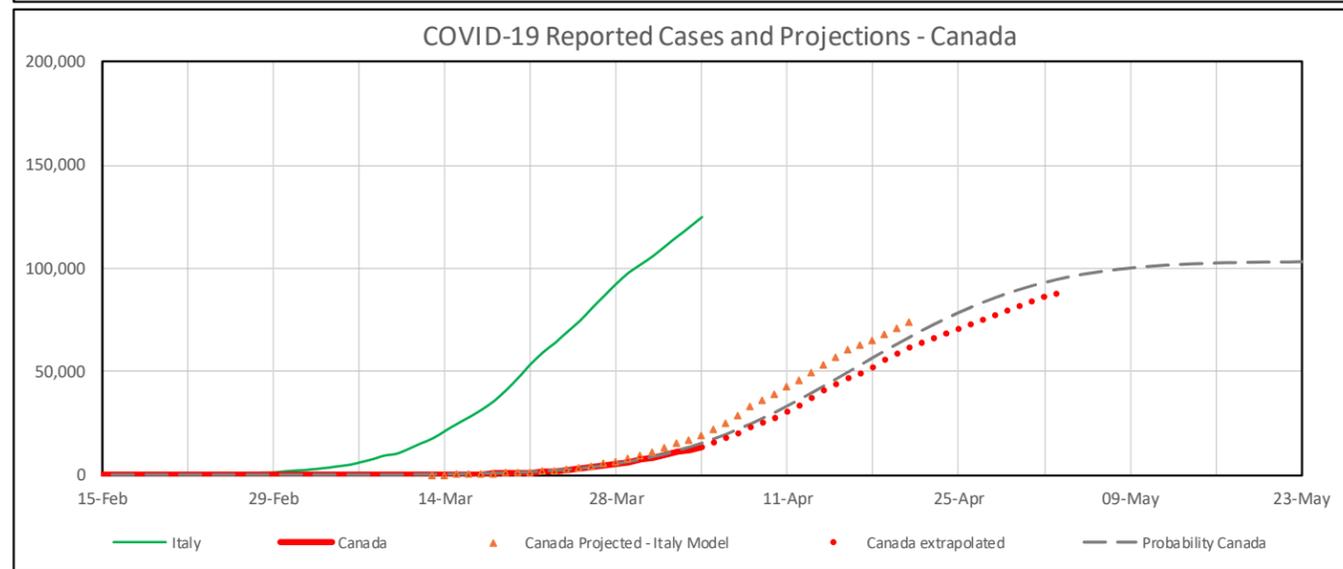
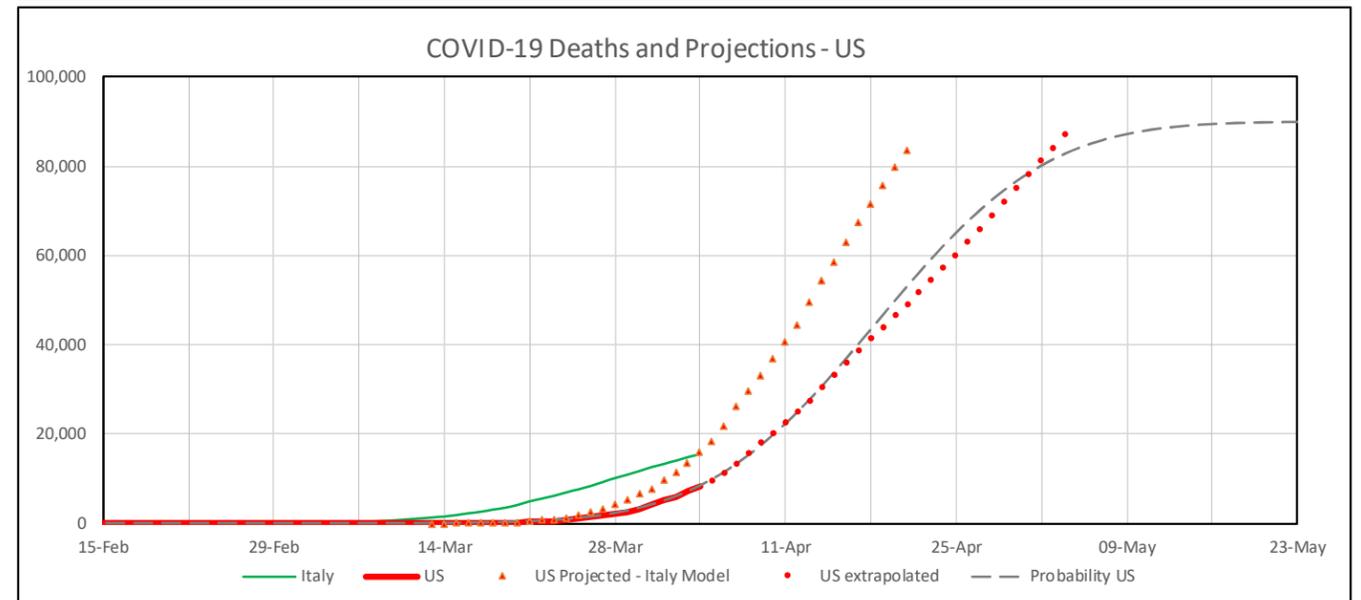
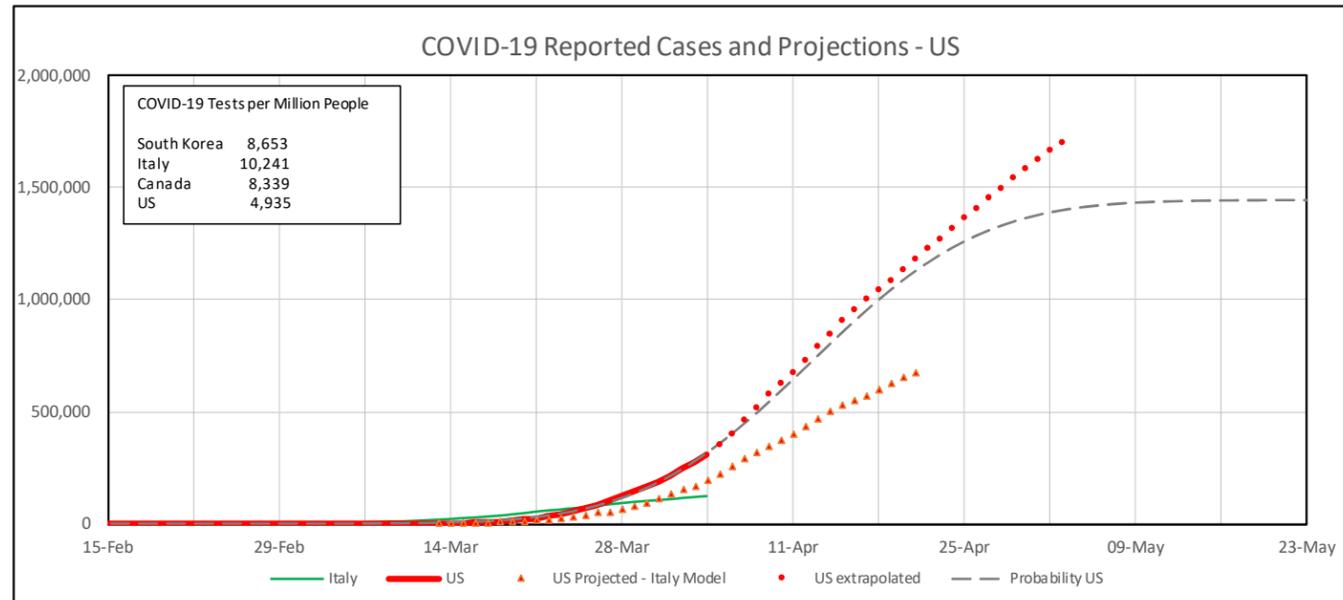
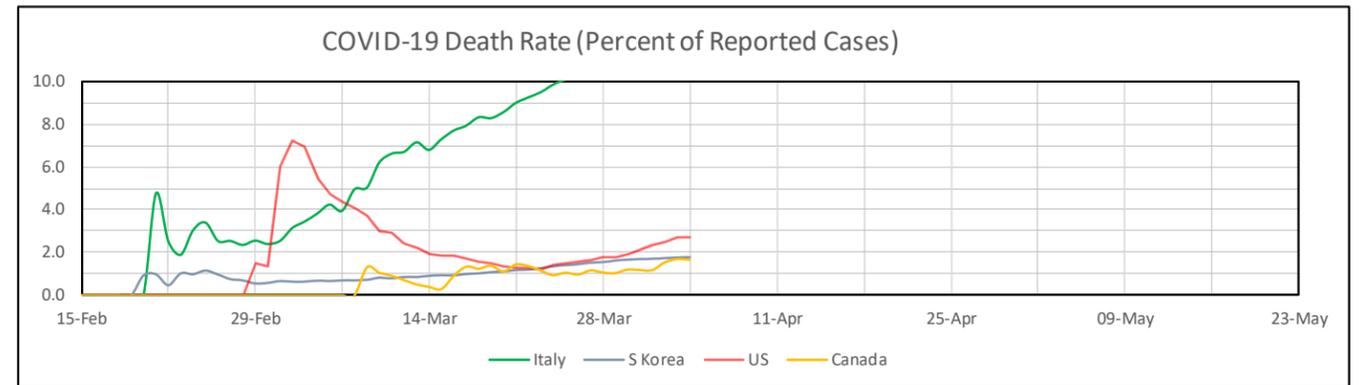
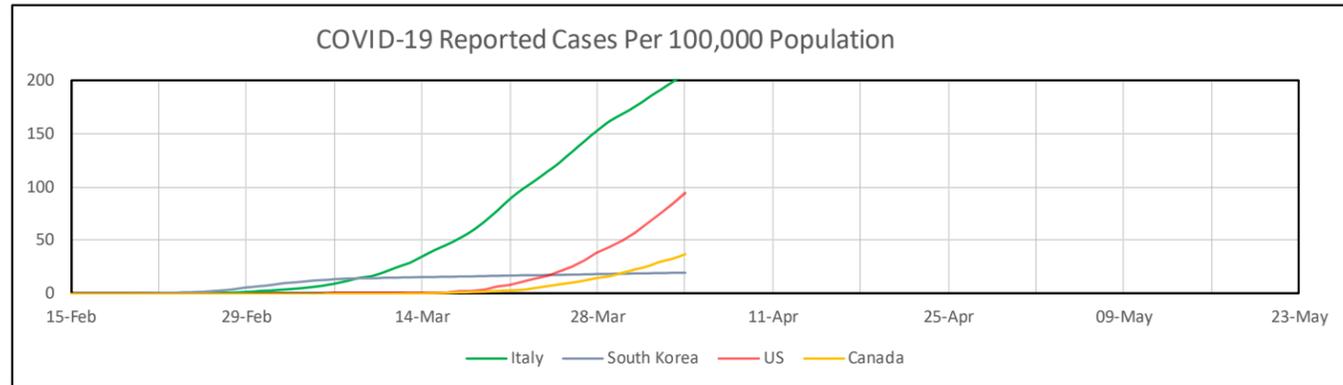


COVID-19 Observations – 5 April 2020 – by Alex Harrington



Ontario has released its modelling results so now you can tell what the policy makers are seeing – the feds don't think we can cope with that kind of knowledge so they're keeping their data secret. 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 most of the South Korea data – it's pretty clear we have no hope of following that line so there's no point cluttering things up with the unattainable.

The cases per 100,000 population (top left) show both Canada and the US rising, but the US is at more than double the rate of Canada. This indicates the effectiveness of the restrictions in Canada as opposed to the US where they started later and have a wildly varying compliance rate.

I've taken a bunch of stuff off the charts – all the projections using Korea – we'll never get there so why look at it. I've kept the red triangles – what would have happened if we had followed the Italy Model from the start – and the red circles are the projection of where we'll be if we follow the Italy Model from now on. None of the data have started to bend over yet so I can't tell when things might ease up. So I added a probability model – that's the dashed line. It takes what we've seen so far and finds the probability of where we'll be. We're still early and there isn't much shape to the data so the probability model will predict a bit low.

What this shows for Canada is that things won't start to level off until at least early May, with a case count just over 100,000. Ontario's just released numbers show 80,000 cases in Ontario alone, so as I said before, my estimates will be a bit low until there are more data. That also means that the levelling off could take a bit longer.

The US data are similar but it's still early. The US is likely to be plagued with outbreak after outbreak as current hot spots peak and new infections show up because of the uneven adherence to social distancing. Right now I estimate a total just under 1.5M cases but that will probably go up as the situation evolves.

The data for deaths are on the right. The top right chart shows the death rate as a percent of reported cases. Canada is sneaking up on two percent while the US is approaching three percent.

In Canada (bottom right chart) the probability model estimate is 2,500 deaths by early May. The US death estimate is about 90,000. Both of these are in line with the numbers recently released by the respective governments.

Testing information is on the centre left chart. Testing per million population has increased 424 for South Korea, 1,295 for Italy, 1,235 for Canada and 1,269 for the US since the update on April 2. This represents about 15,000 tests per day for Canada and 140,000 tests per day for the US. I looked at how many new cases were reported each day and compared it to how many new tests were done the same day for the last couple of weeks. It varies a bit but Canada reports about 70 new cases per 1,000 tests while the US is at about 200 cases per 1,000 tests. Italy is at about 150 while South Korea is at 15 cases per 1,000 tests.

We've seen that cases could be levelling off in early May. That doesn't mean the restrictions will be lifted then. Without some plan for lifting restrictions, we would just get a resurgence of infections. A plan for easing will probably rely strongly on testing, and testing that gives quick (as in hours or less) results, and allows for lots of tests. We don't have that yet. So two things have to happen – cases level off and testing ability greatly increases.

If we look at South Korea we see that they get 15 new cases per 1,000 tests. They hunt down cases and do contact tracing, but they have no lockdown. If we don't do that when we come out of this phase of the infection, we are doomed to repeat what we are going through now. Ontario has recently revised its testing goal from 5,000 per day to 18,000 per day. If this can be done, we will be on track to start a new approach to testing that will allow us to better deal with this virus. Until then, we just have to get through this stuff.

Overall I think we're all right. We don't hear of hospitals being overwhelmed or refusal to believe that this is a serious problem as we do in the US. But this all depends on maintaining our self isolation and social distancing protocols. It is the only weapon we have right now. The earliest I would even contemplate any kind of relief is late May when we may get relaxed but still necessary movement restrictions.

I think this will be my last Sunday update unless I get an overwhelming surge of requests to continue. That's unlikely since I only have five readers. We all pretty well know what's happening and generally what to expect. I'll keep doing Thursday updates.

Take care of yourselves and don't endanger others.