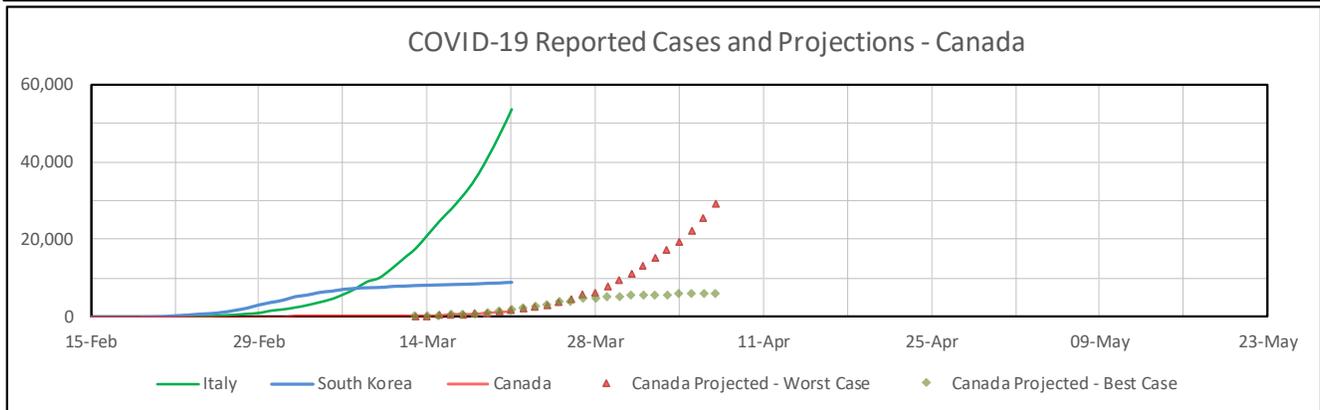
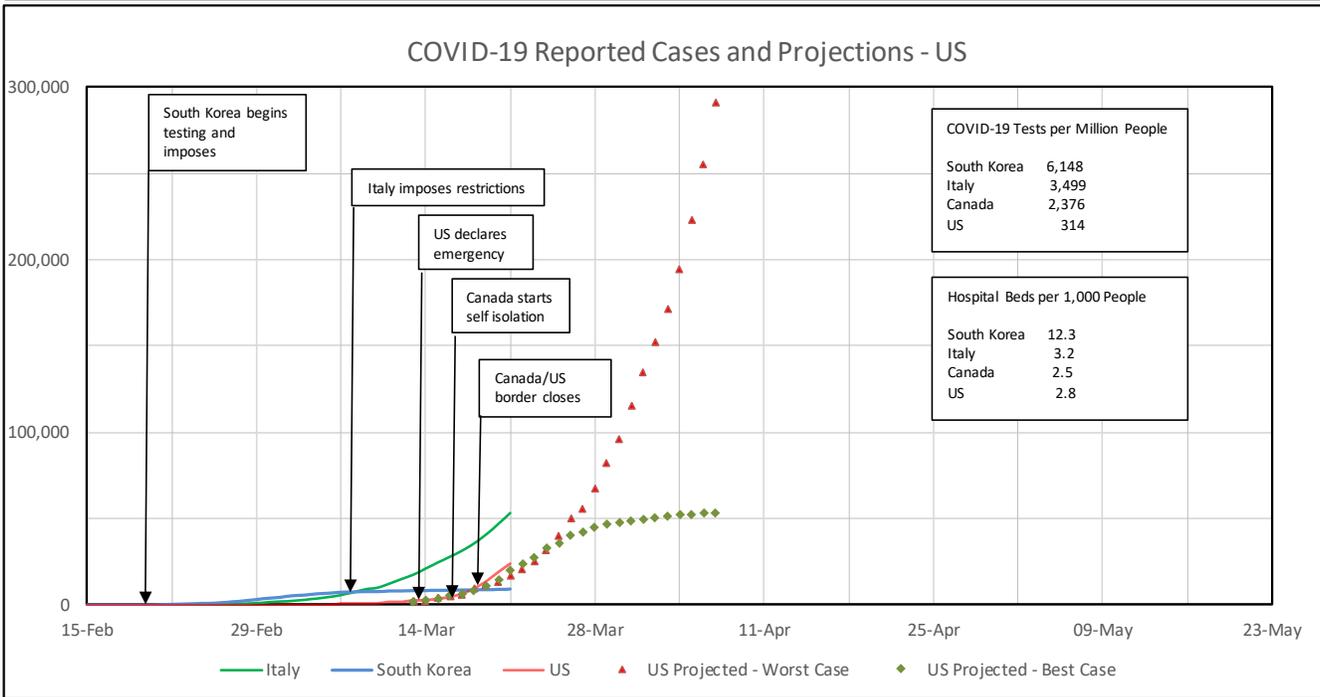
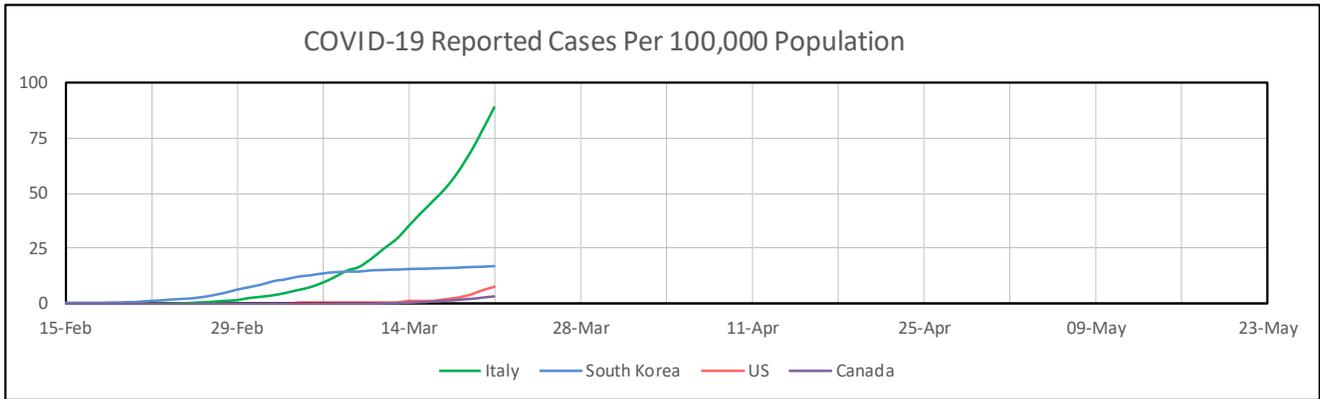


COVID-19 Observations – 22 March 2020 – by Alex Harrington



I like to look at data so I thought I would see what the COVID-19 data are saying to me and what it tells me we might be in for. I took data from South Korea and Italy because they seem to be the two extremes – one country that got things under control quickly and one that got overwhelmed. Then I took the US because its big and next door and of course Canada because it's home.

The data mainly come from <https://www.worldometers.info/coronavirus/#countries> and are updated daily. Country population and things like that are easy to get. The top chart shows the number of cases per 100,000 population. You can see that the US and Canada are 17 to 22 days behind Korea and Italy. What's readily apparent is that Korea seems to have things under control after about three weeks while Italy is still struggling. Why is that? The middle chart shows reported cases but it also shows when countries reacted. South Korea reacted immediately (they were at about 1 case per 100,000) while Italy waited for over two weeks when their case count was about 12 per 100,000.

The Canadian and US reactions were fairly quick – our case counts were between 1 and 2 per 100,000 when measures were announced. We don't know how effective those measures will be – Canada has probably been more effective at self isolation than the US – at least so far.

The middle chart also shows the projected cases (Canada has a separate chart because the numbers are smaller). There are two projections – one if we follow the path South Korea took (best case) and one if we follow Italy's path (worst case). These projections are based on real numbers – using the reported cases in Italy and South Korea and adjusting for the population of Canada and the US respectively.

Its unlikely we'll follow the best case for a few reasons. South Korea responded immediately with intense sampling and isolation of confirmed cases. The table on the middle chart shows testing per million people and South Korea reacted with over 6,000 tests per million people. Italy is just over 3,000 and Canada is over 2,000 per million. In contrast, the US has managed just over 300 tests per million people. Of course the US tests were mostly on basketball players, movie stars and politicians and their families. Another factor is hospital beds shown on the table in the middle chart. South Korea has 12.3 hospital beds per 1,000 people. Italy has 3.2, the US has 2.8 and Canada 2.5. So Canada is testing at less than half the rate South Korea does while the US is at one twentieth the rate of South Korea. And we have less than one quarter the hospital bed capacity. But compared to Italy we got a slightly earlier start in our response.

Its too early too tell for sure what will happen, but we should see at least ten times the number of reported cases we have now – remember actual cases can be up to ten time this number. And we are unlikely to track the best case scenario but how far away from it we'll be is too early to tell.

This analysis is fairly simple but it does let you see what's happening and where we might go. Don't jump all over me if you're an epidemiologist or any other kind of ist. This is just my take on things after looking at the numbers. I'll up date this once or twice a week as more numbers come in.