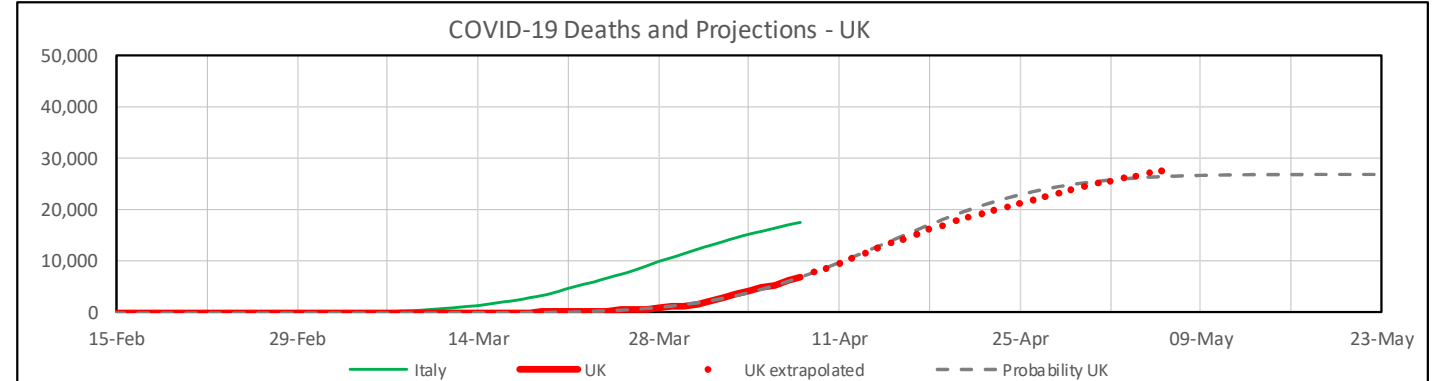
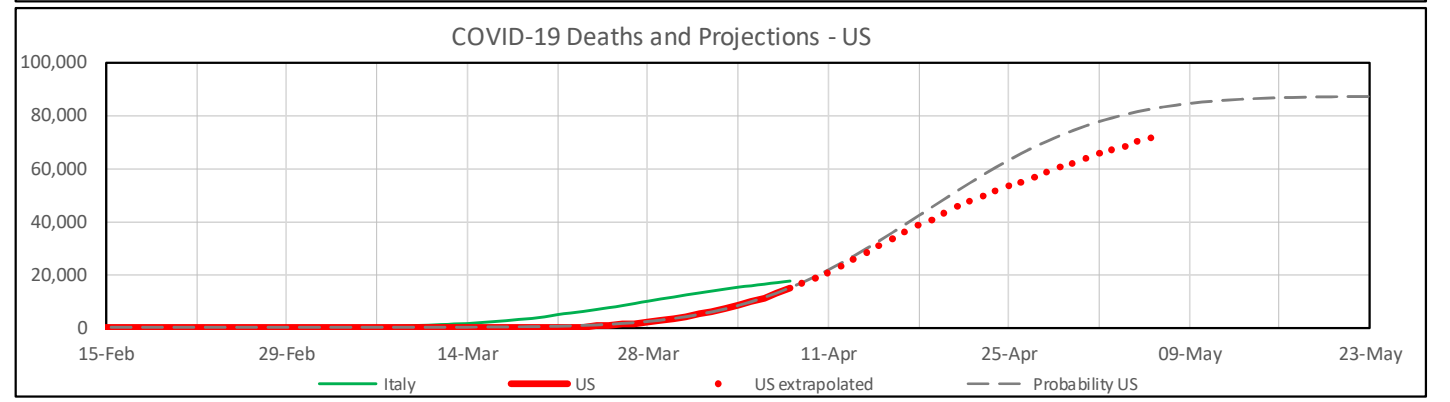
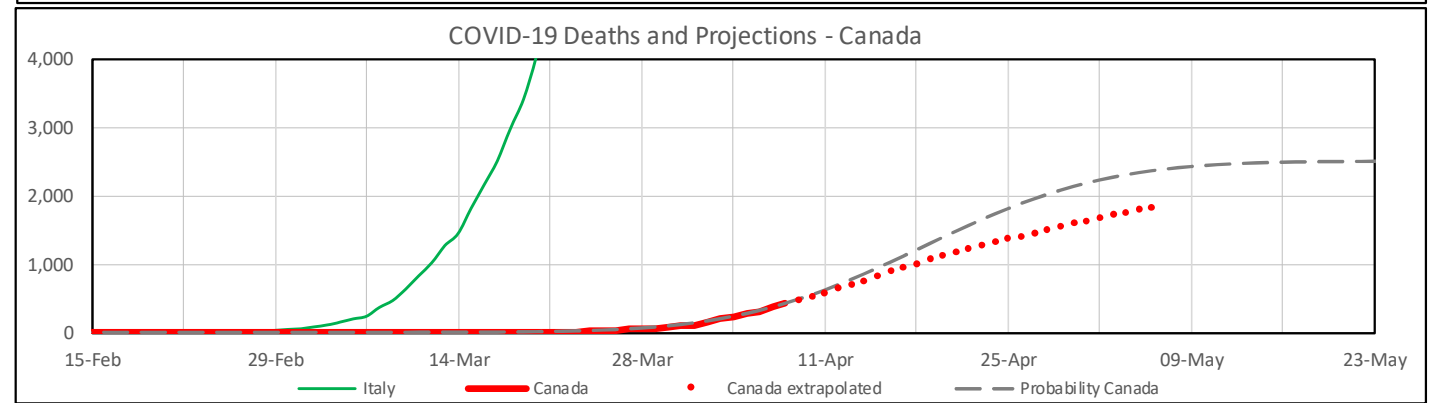
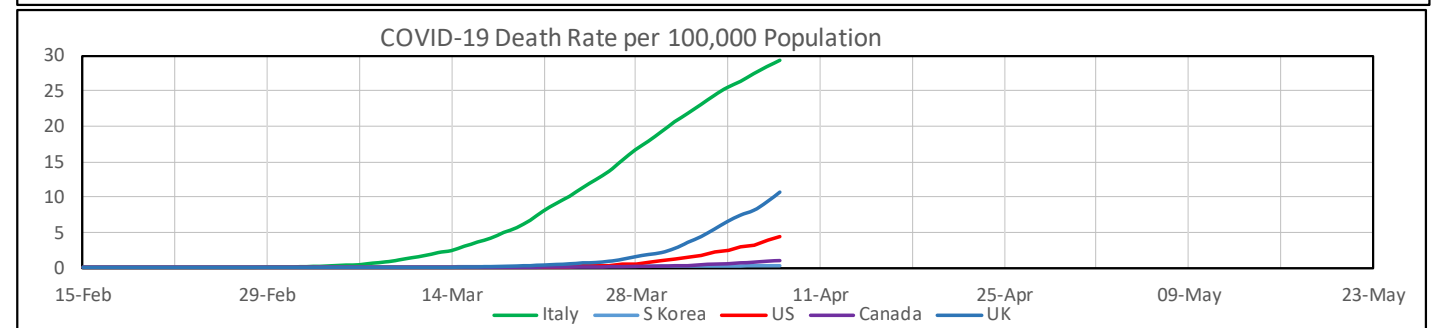
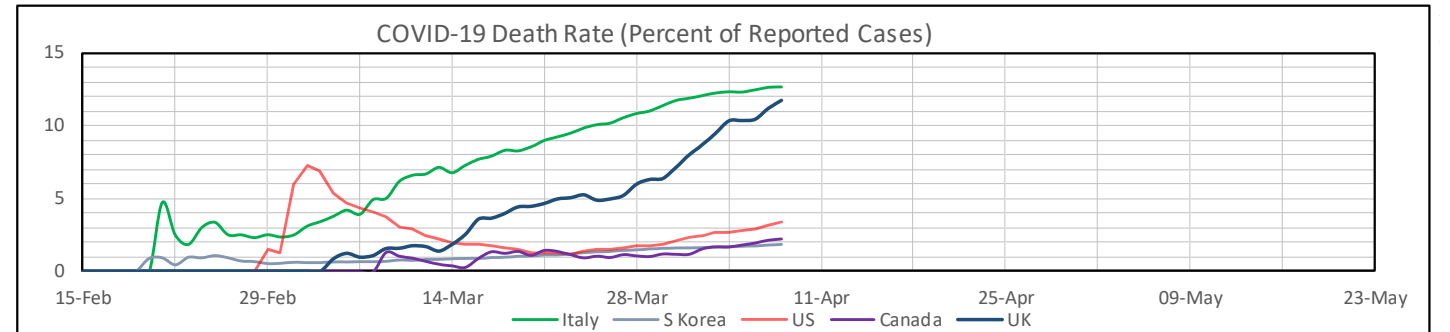
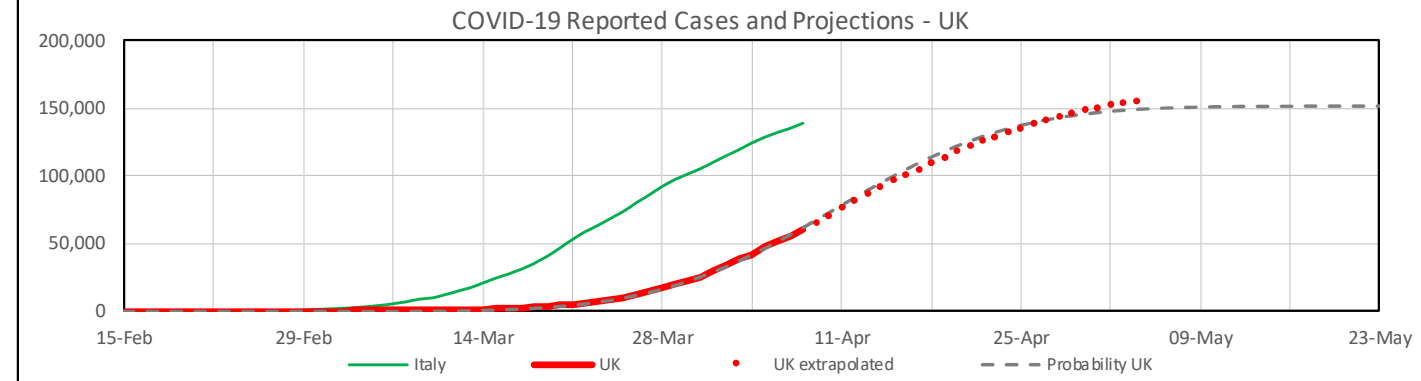
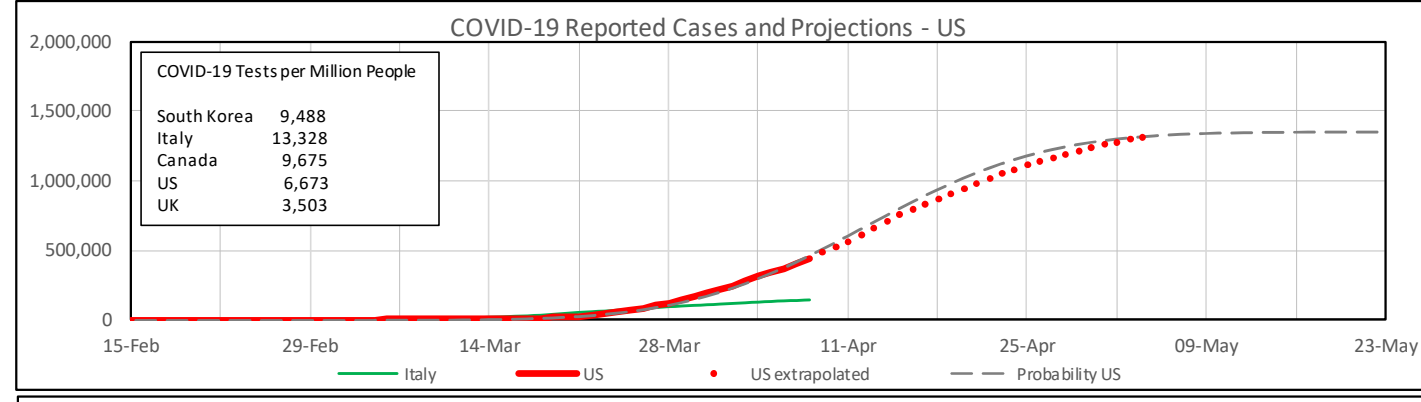
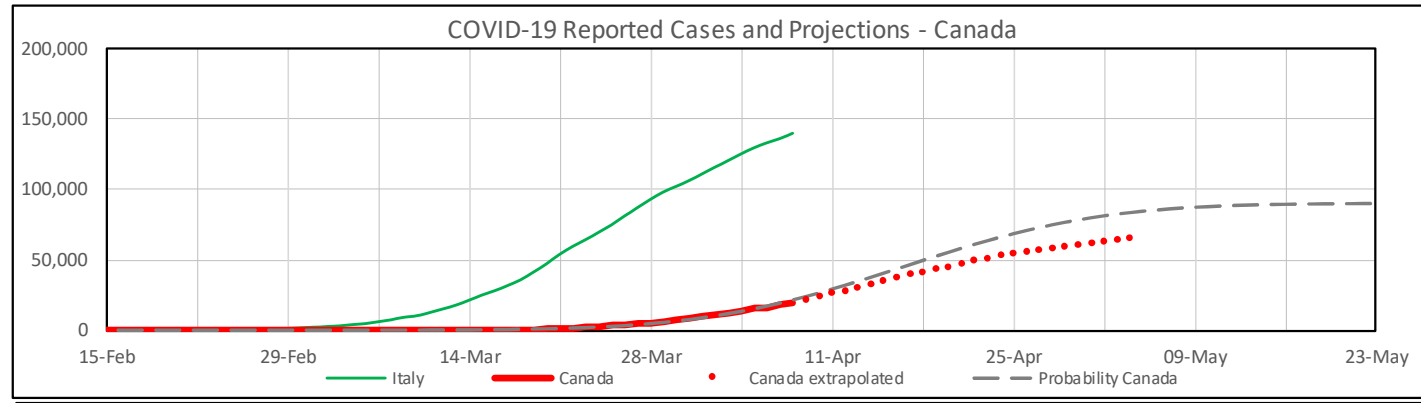
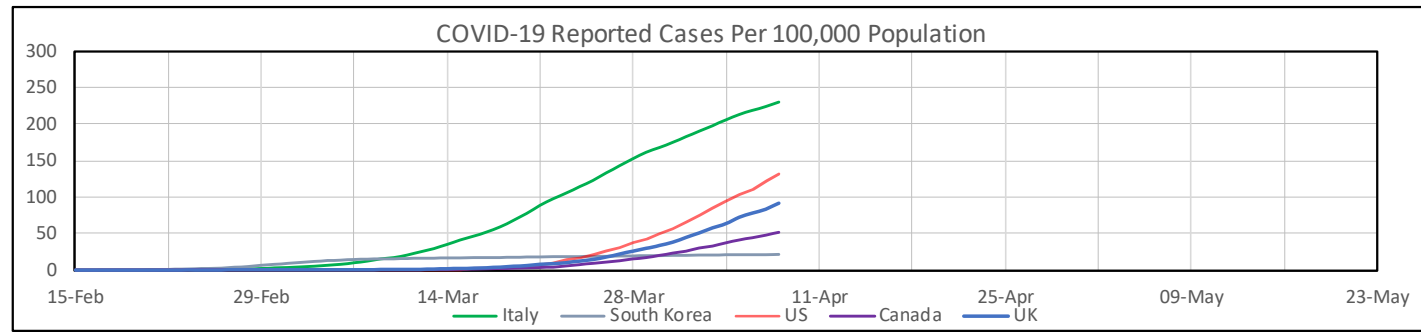


COVID-19 Observations – 9 April 2020 – by Alex Harrington



The charts are a bit different this time. I've been asked to include the UK so now there are four charts per side (plus one extra on the right). I've put Canada at the top of the country charts – sounds like a song. As usual - on the left we have reported cases – the top shows cases per million population and the bottom three show reported cases for the Canada, the US and the UK respectively. On the right we have the data for deaths - as a percent of reported cases on the top, and I've added deaths as a percent of population to match the case charts. The actual deaths for the three are countries below that. I've also taken off the Italy Model forecasts – it's pretty obvious we're not following them now.

The cases per 100,000 population (top left) continue to climb. The US is over 100 cases per 100,000 population and with the peak a week or two away they are on track to match Italy. The UK is at about two thirds of the US rate with Canada at about one third. 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. The UK is between these two, with a relatively later start than Canada but reasonable compliance once they realized that "herd immunity" wasn't going to work without a huge death toll.

The case charts haven't changed that much since April 5. Recalibrating the probability models with additional data since then has shown little change. We can expect the peak in number of new cases in a week or two, but it will be into May before the total cases start to level off. The UK is about a week earlier than us.

The death data are on the right – the top chart shows deaths as a percent of reported cases. Italy and the UK have very high rates mostly because things got away from them at the start of the infection. In the UK the testing rate is fairly low and focused on hospitals so the death rate should be higher than where there is broader testing. The death rates per 100,000 population show the same story – higher rates and climbing more steeply in Italy and the UK than in Canada or the US.

The total deaths estimated from the probability analysis hasn't changed significantly, even with a few more days' data. What has changed is that the US official death estimate has been lowered to be in line with what I have estimated.

Testing continues and Ontario remains at about 24% of the national total and its per capita rate is the lowest in the country. Ontario continues to lag – it is managing only about 3,500 tests per day even though it has claimed capacity of 5,000 and most recently up to 13,000 tests per day. For whatever reason it has not managed to live up to its stated capacity although it claims changes are coming soon.

Testing information is on the centre left chart. These data indicate about 13,000 tests per day for Canada, 141,000 for the US and 13,000 for the UK. But this hasn't changed for a week or more so in fact the testing is just holding a constant rate as has happened in Ontario. The daily new cases per 1,000 tests hasn't changed much either. Canada reports about 100 new cases per 1,000 tests over the last week or more while the US is at about 200 cases per 1,000 tests. Italy is at about 150, the UK is at 450 while South Korea is at 15 cases per 1,000 tests.

So there hasn't really been a big change – the cases just keep coming. Some say we're seeing some positive things but we won't really know until it's past. For example Italy has passed the peak of new cases but the situation is still bad. The day to day fluctuations are large – just one pocket of cases throws everything for a loop. I just look at an average over the last week or so and haven't seen reason for huge optimism yet. But there's no reason for pessimism either – the deaths are not as bad as some had forecast, although they lag the case curve by a week or more. As for the US who knows – the reality gap that exists there may well result in prolonged misery for that country's citizens.

We've seen that cases could be levelling off in early May but lifting restrictions will be weeks or more likely months away, and getting back to whatever a new normal is will probably be next year. Plans for easing are still being developed and will probably include things like easing restrictions in the reverse order in which they were applied and easing permitted group numbers. Testing will be crucial to monitor the success of easing but as we've seen, testing so far is not up to this task. We should get a better idea of what plans are being considered in the next week or two.

Things are progressing – self isolation and social distancing are having the intended effect. But it will be slow – a couple of months at least before we can even get out. Nerves will fray and patience will wear thin.

It will end. Eventually.

Take care of yourselves and don't endanger others.