11 March, 2020

#coronavirus, #COVID-19, #publichealth, #interpreting_the_data, #basic_forecasting, #publicsafety

Friends, here is my interpretation of the numbers that we have visible to us today, and I will be the first to admit this is somewhat of an amateur analysis, because, in part, we still do not have ALL of the facts. I'm not an expert in this field, but this is how I interpret the facts on hand by reading and using the current charts on the spreading of the disease in the US. (Apologies in advance for any typos...)

If you look at the condensed US profile here: https://www.worldometers.info/coronavirus/country/us/, scroll down to the chart labeled "Total Coronavirus Cases in the United States." In that chart, click the "logarithmic" tab, and you'll see a chart that shows what I consider "Exponential growth"

In a logarithmic graph, he left axis is "powers of 10," so any upward trend is going in powers of 10 growth. If you slide your cursor from March 6 to March 10, you will see that the numbers in the US grow by a factor of THREE. If that holds true for the next 4 days, we could be seeing 3,000 cases (if not more). THESE are the numbers that Governor Jay Inslee is looking at. If we do NOT curtail the growth, after 8 days, the number is 9,000, 12 days, 18,000, 16 days: 26,000, 20 days: 52,000, and 24 days: 104,000.

Ergo, in the US, we could predict 104,000 coronavirus patients in 24 days. THIS projection correlates with today's Congressional testimony by Dr Fauci at the NIH (see link below). If the current US numbers are understated by half, then slice 4 days off each of the above estimates to get a sense of the impact. We’d be at 208,000 in just 24 days. Boggles the mind, and, hopefully the US government won’t wait any longer.

Here in the US, we may already have used up 30 days (since Feb 11), or 60 days (since Jan 11), potentially allowing widespread diffusion of coronavirus throughout the country. If that’s the case, the eventual tapering benefit of quarantine may not happen until our numbers are well over 100,000, and that's only if we successfully manage quarantines. (NO, I don't like these numbers at all, and I wish there was some way to dispel or disprove them, but I don't see that in the cards.)

Take a look at Italy to get a sense of how a nation’s coronavirus trajectory changes following very strong quarantine measures, https://www.worldometers.info/coronavirus/country/italy/ If you look at the logarithmic graph of their confirmed cases, you will see it is finally beginning to taper. Still going up, but tapering.

My point: It seems to me that we are nowhere near understanding, or recognizing, the problem in the US. In short, IMHO, the US may be close to complete denial, toilet paper included.

If you look at the same charts for China, S Korea, and even Iran, you'll see the same tapering trends as Italy. HOWEVER, if you look at France, Germany, Spain, and the US, which have all largely deferred quarantines, the trends are continuing upward EXPONENTIALLY: See: https://www.worldometers.info/coronavirus/#countries

Our problem in the US may turn out to be worse, or better than any of the European countries, since our geography is relatively huge. HOWEVER, China's size is comparable to the US, and they paid a high price for delaying. We, in the US, have unfortunately delayed far, far longer. In fact, we can document that we’ve delayed nearly 2 1/2 months longer, since China was building emergency hospitals by Jan 15!

On the same charts, on Jan 22, China had 571 cases, almost ALL isolated in Wuhan. The US is already recognizing about twice that number today, and we have barely begun to address quarantines at a federal level.

So, I encourage everyone take the time to look at the real coronavirus data we have available, and draw your own
conclusions. We, the public, have been given access to some pretty amazing data, and once you get over the initial sense of overwhelm, I hope my suggested “tour” of the tools helps everyone understand how to maintain a personal sense of what is happening on a day to day, week too week basis. It can help us explain the situation to our friends, family, kids, and others, too.

BTW, I, too, just had a family member slam me with "I don't trust ANY of those fake news outlets." I simply directed him to www.foxnews.com/category/health/infectious-disease/coronavirus, and also www.foxnews.com/politics/nihs-fauci-warns-congress-on-coronavirus-its-going-to-get-worse. The point is that Fox News does not seem to be candy coating the news. No, they aren't publishing 100% of the most extreme sound bites found on some other web sites, but they ARE now posting most of the bare details needed to understand what is unfolding.

Mark Twain said "There's lies, damn lies, and statistics." In this case, statistics probably win, unfortunately. Again, some have claimed that US statistics are false/falsified/hidden/delayed, and therefore too low, because the CDC and many states appear to have inadvertently, or possibly intentionally, suppressed testing to keep the US numbers low. If that IS the case, the situation may be considerably worse than the numbers currently disclose.

We in the US do NOT have the hospital surge capacity to suddenly handle 100,000+ more patients. Just like Lombardy, Italy, we could find our ICUs and EDs completely overwhelmed, with dire consequences. Just look at the huge jump in patients today in Italy.

This is a pretty good article that discusses the rationale and risks associated with failure to quarantine. See: https://www.statnews.com/2020/03/11/flattening-curve-coronavirus/ I think there is a Journal of Virology paper on the topic that goes in more depth, too, but the point should be clear: failure to quarantine can easily overwhelm health system capacity. With coronavirus, that is especially bad for persons over 60 who have underlying serious diseases.

I hope that A) this information is useful to you and your community in interpreting what we are hearing, B) helps you make plans for yourself, your family, and your community, and C) I sincerely hope and pray that we all get a surprising reprieve, whether from weather, vaccine, or very effective and immediate action by all of our governors in the US and their counterparts around the globe.

Just my 2 cents. Glad to have experts in the community correct and/or refine my analysis. No ego here; just trying to figure it out and explain it to others as best I can.

Peace.

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