The Covid-19 Lockdown “Natural Experiment” That Has Already Been Conducted (*Working Paper*)

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Abstract: In the six U.S. states which never imposed stricter isolation measures, as of June 1, 2020 observable increases in new cases or deaths had not occurred, compared to demographically similar neighboring states that imposed tight lockdowns. This is consistent with the fact that modeling forecasts of a sharp uptick of deaths across the United States -- as many (also largely rural) states began reopening around early May of 2020 -- turned out to be considerably overdrawn. A key implication of the experience from the six non-lockdown U.S. states, as well as from countries such as Sweden, is not that Covid-19 mortality deaths in those places have been *lower* than elsewhere, but if outcomes have generally not been *worse* this suggests that similar results may be achieved at substantially lesser economic, societal, and quality-of-life cost. The urge to apply a one-size-fits-all approach should be reconsidered.

Much media reporting, beginning around the end of April 2020, had suggested that -- as more U.S. states begin reopening their economies¹ -- the country was entering a kind of “huge natural experiment,” as CNN termed it, one in which many people could die as a result. In fact, the country has already been conducting such an experiment: in six U.S. states stricter isolation measures were never mandated.² So, what does the evidence reveal from this natural experiment, which had been running, as of June 1, 2020, for nearly three months?

All six non-lockdown states are predominately rural and, except for Arkansas and Wyoming, are located in the Midwest; an appropriate comparison is to demographically and otherwise similar neighboring states. Epidemic levels and trends vary greatly from state to state³ and within states, with new cases typically centered around hot spots such as meat packing plants, nursing homes, prisons, and other crowded indoor settings. Naturally, the numbers of reported cases and deaths also tend to oscillate over time. Regrettably, there is no realistically accessible as well as empirically valid “average number” that can be meaningfully compared across different states. However, an examination of the levels and trends of per-capita cases and deaths occurring to date between the six states that never fully closed down, as compared to neighboring and similar

states which tightly curtailed economic and social activity, reveals no clearly observable differentiation.³

Arkansas and Oklahoma, for example, are culturally, politically, and demographically similar (though the former's African American population is somewhat larger). Arkansas never completely shut down -- although *voluntary* societal adoption of physical distancing and other precautions has, as in the other non-lockdown states, reportedly been widespread -- whereas Oklahoma began reopening towards the end of April. Per-capita deaths remained much lower in Arkansas than in Oklahoma, although starting around mid-May (several months after neighboring states including Oklahoma had tightened down), the number of new cases in Arkansas had begun to slope somewhat upwards. While South Dakota and Iowa had suffered localized outbreaks at meat packing plants (as has also occurred in various shut-down states such as Virginia and North Carolina), the statewide trends there as well as in Nebraska had been generally falling over time, similarly to elsewhere in the region. The remaining never-shutdown states, North Dakota and Wyoming, as of June 1, 2020 continued to report very few cases.³

Covid-19 has of course spread dramatically in some of the places which shut down tightly, particularly in densely populated areas (especially with heavily utilized mass transit systems) like New York City, New Jersey, Chicago, and Detroit. Yet even the more rural regions of Ohio and Michigan, states which mandated very constrictive shutdowns (and in the latter where the governor mandated epidemiologically-questionable policies such as banning people, including many retired auto workers, from traveling to their second homes) had not reported proportionally fewer cases than similarly rural areas in neighboring states, such as Iowa, which never fully locked down, or Missouri, which only closed down for a relatively short period. And California, which had also imposed rather tight measures, had begun seeing surges in the southern region (yet not elsewhere in the state so far). An intriguing case is Georgia, which was criticized even by Mr. Trump for reopening too aggressively. Over a month after having done so, official numbers would indicate a decline in cases, although questions have surfaced regarding statistical misrepresentation⁴; the corrected numbers suggest something more of a plateauing through June 1, 2020.

Unfortunately, there are too many inherently complex factors to determine precisely the effect of those six states having remained open. A Wall Street Journal analysis that attempted to statistically assess the impact of U.S. shutdowns⁵ - concluding there had been very little - was based partly on questionable methodological assumptions. But the totality of the preceding evidence certainly leads to a similar conclusion as that analysis: the six states that never locked down fully had not, in the aggregate, suffered negatively compared to demographically and otherwise similar neighboring states which remained tightly shut.³ If anything, they seem overall to have fared slightly better. (Per-capita testing levels had also not been observably different in the six states compared to the similar lockdown states.) It is unsurprising therefore that modeling conducted in late April of 2020 by Johns Hopkins/FEMA,⁶ which forecast a sharp mortality uptick as other (many also largely rural) states began to reopen, predicting 3,000 daily deaths by early June, had clearly overshot the mark. Covid-19 deaths in the U.S. hovered at around 1,000 per day throughout the latter third of May 2020, several weeks after many of those states began reopening.

One country which has received attention for also choosing a less restrictive approach is Sweden, where even though most businesses and schools have remained open⁷ Covid-19 deaths have been declining, though not quite as steeply as in most other European countries. (And despite the government's earlier interest in a "herd immunity"-based approach, that goal appears to have fallen far short: in mid-May 2020 only 7% of residents in the capital, Stockholm, tested positive for antibodies.⁸) Media coverage has focused on Sweden's per-capita death rate being much higher than in other Scandinavian countries. However, a crucial difference is that in Sweden most reported cases (not only deaths) have occurred heavily among the elderly,⁹ particularly those residing in long-term care homes -- similarly to the situation in Italy, Spain, Belgium, France, Netherlands, and the UK.¹⁰ Those countries (and, for example, the New York/New Jersey area) all had reported higher death rates than Sweden, despite having tightly locked down since late March of 2020 or in most cases even somewhat earlier.

That Sweden's mortality is lower than those European countries becomes even more evident if comparing via excess mortality (current deaths compared to typical levels in preceding years), instead of relying only on official Covid-19 mortality rates (for which Belgium and Sweden have maintained near completely accurate data).^{1,11,12} Thus while official statistics would suggest, for

example, that Belgium's death rate is not only the world's highest but is about double that of neighboring Netherlands', if instead the comparison is based upon excess mortality the two countries' actual death rates appear much closer.^{1,12} (It would therefore be mistaken to conclude that Belgium's mitigation efforts have necessarily been inferior to the Netherlands, since the more pertinent explanation may simply involve an issue of data reporting quality.) Along similar lines, excess deaths as of June 1, 2020 were considerably lower in Sweden than in a number of other countries.¹²

Very importantly, all of the aforementioned places, including Sweden, have failed to implement adequate control measures in elderly residences.^{7,10} Whereas in Norway and Denmark, similar to the situation in Germany, South Korea, and Japan, a much larger proportion of infections has for some reason occurred in relatively younger people,⁹ consequently resulting in considerably lower Covid-19 death rates. Apparently also very salient, if rarely mentioned, is that the immigrant population in Sweden has suffered disproportionately far greater infection and mortality rates, reportedly due in part to insufficiently targeted prevention campaigns.¹³ By one recent estimate, perhaps up to 40% of all Covid-19 deaths in Stockholm had been solely among Somali refugees (who comprise a minority of foreign-born immigrants in the city, after Iraqis, Syrians, and Afghans, in that order).¹⁴ Non-European residents also comprise -- differently than the case elsewhere in Scandinavia -- the majority of the country's nursing home employees. While certainly understandable, the possible fear by the Swedish government of a xenophobic or Islamophobic backlash may however have resulted in grave public health consequences.^{1,14}

A key implication of the experience from the six non-lockdown U.S. states as well as Sweden is not that death rates in those places have been *lower* than elsewhere, but if outcomes generally have not been *worse* this suggests that similar results may be achievable at a less drastic economic, societal, and quality-of-life cost. (In the case of Sweden, a fairer comparison would be to more epidemiologically similar European countries, rather than utilizing the "ecological fallacy" of comparing its outcomes only to those of the other Scandinavian nations.) A recent Atlantic essay advised it's time to learn "how to have a (safer) life during a pandemic," as we've been forced to do with other health crises such as HIV-AIDS.¹⁵ Certainly, the urge to apply a one-size-fits-all approach must be reexamined.

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