The CDC's Mask Mandate Study: Debunked

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The US Centers for Disease Control and Prevention (CDC) recently published a February 2020 MMWR report entitled "Decline in COVID-19 Hospitalization Growth Rates Associated with Statewide Mask Mandates — 10 States, March–October 2020." This report focused on 10 sites that had been included in the Covid-19 Associated Hospitalization Surveillance Network.

This CDC report described a decrease in hospitalization rates of growth of up to 5.6% in adults (18-65 years old) and attributed this to the use of masking and/or the introduction of mask mandates in the various sites. These rates were compared to those obtained from a 4-week period of time prior to the introduction of mask mandates. In so doing, and by way of regression analysis, the reduced rates of hospitalization were attributed to the introduction of statewide mask mandates.

Firstly, the initial publication by the CDC (February 5/February 12th, 2021) was plagued with important inaccuracies that were then fortunately addressed in an updated *erratum*(February 26th 2021). We applaud the CDC for taking the steps required to correct these errors. Reporting done by the CDC, which is generally considered as the premier public health agency in the US, must be of the highest quality, particularly since advice rendered by the CDC is also relied upon worldwide.

En face, CDC's conclusion on mandates might appear to make sense unless one is familiar with the scientific data pertaining to the ineffectiveness of masking for prevention of the spread of Covid-19 (e.g. references 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15) in which case the findings in fact contradict most of what is now known. The CDC's conclusion might have made more sense if the real-world evidence we have about mandates did not actually exist (e.g. references 1, 2, 3, 4).

Does the CDC really think that masks prevent the wearer from getting Covid, or from spreading it to others? The CDC admits that the scientific evidence is mixed, as their most recent report glosses over many unanswered scientific questions. But even if it were clear – or clear enough – as a scientific matter that masks properly used could reduce transmission, it is a leap to conclude that a governmental mandate to wear masks will do more good than harm, even as a strictly biological or epidemiological matter. Mask mandates may not be followed; masks worn as a result of a mandate may not be used properly; some mask practices like double masking can do harm, particularly to children; and even if a mask mandate results in some increased number of masks being worn and worn properly, the mandate and the associated publicity may reduce the public's attention to other more effective safeguards, such as meticulous hygiene practices.

Thus, it is not surprising that the CDC's own recent conclusion on the use of nonpharmaceutical measures such as face masks in pandemic influenza, warned that scientific "evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission…" Moreover, in the WHO's 2019 guidance document on nonpharmaceutical public health measures in a pandemic, they reported as to face masks that "there is no evidence that this is effective in reducing transmission…" Similarly, in the fine print to a recent double-blind, double-masking simulation the CDC stated that "The findings of these simulations [supporting mask usage] should neither be generalized to the effectiveness …nor interpreted as being representative of the effectiveness of these masks

when worn in real-world settings."Is this merely a perfunctory and legally prudent warning that "your mileage may vary?" Or is it more like a hot mutual fund telling you that "past performance is no guarantee of future results?" What is the CDC really trying to say about face masks and why so much confusion?

We have reservations about the methodology employed and conclusions drawn in the CDC double mask study which we will address in a separate discussion but again their disclaimer as noted above: "The findings of these simulations should neither be generalized to the effectiveness …nor interpreted as being representative of the effectiveness of these masks when worn in real-world settings" seeds thoughts of doubt in relation to the value of this report. Why then, would the CDC even bother to publicize these findings? What is the public health impact? What is the benefit?

Moreover, the CDC even indicated in the double mask study that there are harms e.g. impediments to breathing, due to double masking. Indeed, the harms (e.g. reference 1, 2, 3, 4, 5, 6, 7, 8, 9, 10) are very real when face masks are used yet are often dismissed and not even discussed by the media medical establishment or government bureaucrats.

In relation to this, Dr. Anthony Fauci of the NIAID created appreciable confusion by initially suggesting and encouraging the use of double masks instead of one. Dr. Fauci then reversed his statements on the use of double masks. Dr. Fauci's advisories took on a form of double peak which has an appearance of randomness or worse, capriciousness. This can only distort the desperately needed advice by the public at large; unsound advice can be very damaging on several levels. This random form of advice-giving was not reflective of a single event. For example, while touting vaccines as the only way for society to emerge back to normal from the pandemic, Dr. Fauci is now advising that in fact, even with vaccinations, people should still not attend public gatherings and restaurants, and that such restrictions could be in place until end of 2021. While changes in advice are required when new data emerge, we hold that this was definitely not the case with respect to masking (or vaccination for that matter).

Below are the main scientific shortcomings or analytical ambiguities in the CDC's most recent MMWR report on mask mandates:

1. The CDC's main evidence, a regression study based on selected sites in ten states with masking mandates from March through October 2020, did not include the four-month period from November through February 2021 (which might have controlled for other possibly contributing factors such as sunlight and vitamin D) and did not appear to take into account the possible effects of such factors as school closures or changes in social distancing practices. We point out that during the period of March 22, 2020 to October 12, 2020 this is actually representative of the spring, summer and early fall seasons when outdoor activity increases. Of course, this leads to more exposure to sunlight with the attendant generation of active vitamin D metabolites, while at the same time there are marked reductions in confinement within enclosed spaces which would necessarily reduce the opportunities for transmission of disease. A more stringent approach to the analyses, including the use of *all* available data (i.e. not excluding a full 4-month period of time), might have led conceivably to a conclusion that there was in fact no significant effect of mask mandates on disease or case rates. And in concert with the CDC's disclaimers noted above, the CDC indicated in their own report that the conclusions described in the study in favour of masking were, at best, only moderately reliable.
2. **The CDC analyzed changes in hospitalizations, but did not compare** infection, disease, or death rates between states with and without masking mandates. Available evidence of that nature suggests that the course of the pandemic was not affected by state masking mandates.
3. The CDC used a least squares fit regression analysis (OLS) (using "x" as mask wearing and the dependent/outcome to the "y" variable which is the number of Covid cases) despite the fact that simple regression is not the optimal approach and, we believe, should be replaced with Orthogonal Distance Regression (ODR) which would yield more reliable findings.
4. Based on the reporting, it appears that the CDC's regression analysis was based on data from limited sites within a state, and not the entire state.
5. The CDC report failed to address/discuss recent potent research data based on high-quality case-controlled analyses, as well as a high-quality Danish randomized controlled trial study published in the *Annals of Internal Medicine* which found no statistically or clinically significant impact of mask-use in regard to the rate of infection with SARS CoV-2, or a recent *NEJM* publication (prospective cohort CHARM study) where researchers studied SARS-CoV-2 transmission among Marine recruits at Parris Island (n=1,848) who volunteered, underwent a 2-week quarantine at home that was followed by a second 2-week quarantine in a closed college campus setting. The predominant finding was that despite the very strict and enforced quarantine, including 2 full weeks of supervised confinement and then enforced social distancing and masking protocols, the rate of transmission was *not* reduced and in fact seemed to be higher than expected, despite the strong experimental design and the rigor associated with carrying out the study.

6. The CDC report does not address and contextualize substantial "real world" experience showing that adding mandates where there is already substantial mask wearing has little effect, and that mask mandates that were followed can be correlated with increased case counts (e.g. references 1, 2, 3, 4). This obviously may not be cause and effect, but the same criticism can be levied against correlations or regressions going in the opposite direction.

Based on our assessment of this CDC mask mandate report, we find ourselves troubled by the study methods themselves and by extension, the conclusions drawn. The real-world evidence exists and indicates that in various countries and US states, when mask mandates were followed consistently, there was an inexorable increase in case counts. We have seen that in states and countries that already have a high frequency of mask wearing that adding mandates had little effect. There was no (zero) benefit of adding a mask mandate in Austria, Germany, France, Spain, UK, Belgium, Ireland, Portugal, and Italy, and states like California, Hawaii, and Texas. Importantly, we do not ascribe a cause-effect relationship between the implementation of mask mandates and the rise in case rates, but we also demand the same approach when it comes to claiming some sort of causal relationship between the introduction of mask mandates and likely claims by the CDC that their findings could support their implementation countrywide.

We think that inclusion of such evidence on the failures of masks mandates globally and states within the US would have made for more balanced, comprehensive, and fully-informed reporting. Specifically, when we consider the evidence on mask mandates, "in states with a mandate in effect, there were 9,605,256 confirmed Covid-19 cases, which works out to an average of 27 cases per 100,000 people per day. When states didn't have a statewide order—including states that never even had mandates, coupled with the period of time states with mandates still didn't have a mandate in place—there were 5,781,716 cases, averaging 17 cases per 100,000 people per day. In other words, protective-mask mandates have a poor track record insofar as fighting this pandemic. States with mandates in place produced an average of 10 more reported infections per 100,000 people per day than states without mandates." The blind acceptance of the current unsupported dogma has become so entrenched that if cases do go up, the experts wedded to the universal use of masks then claim that this is good news and infer that the masking mandate *prevented even more cases* from occurring. This is a fine example of tautology and defies reason. We are very troubled by this type of scientific reporting and inference, for it is based on assumptions, supposition, and speculation.

Masks for the general population as they are currently used (surgical masks and the cloth masks), are ineffective (particularly when used without other mitigation) and the body of evidence (see AIER) is clear. A recent op-ed in the *Washington Post* spoke to mask wearing by everyone during the 1918 flu pandemic, with the conclusion that masks were useless. We embrace fully the contention by Klompas in the *NEJM* that "what is clear, however, is that

universal masking alone is not a panacea. A mask will not protect providers caring for a patient with active Covid-19 if it's not accompanied by meticulous hand hygiene, eye protection, gloves, and a gown. A mask alone will not prevent health care workers with early Covid-19 from contaminating their hands and spreading the virus to patients and colleagues. **Focusing on universal masking alone could, paradoxically, lead to more transmission of Covid-19 if it diverts attention from implementing more fundamental infection-control measures."** We are particularly alarmed by the harms of masking and the failure by top US agencies and leadership (as well as the media and 'media' medical experts) to discuss or highlight harms in any discourse on masking.

We end by imploring the CDC to take our critique in the spirit in which it was generated. We welcome continued, rigorous scientific examination of these important societal lockdowns, school closures, and masking and broader mask mandate issues by CDC and others. We are entirely willing to consider any evidence that contradicts what we have seen which suggests that societal lockdowns and school closures are not effective, and as presented here, suggests that mask mandates are ineffective. Most importantly, to maintain the validity of scientific research as a tool, and the public's confidence in such research, reports on the results of such research should more comprehensively address the weakness or ambiguities that exist, as well as the conclusions the reporting agency supports.

Trusting the science means relying on the scientific process and method and not merely 'following the leader.' It is not the same as trusting, without verification, the conclusory statements of human beings simply because they have scientific training or credentials. This is especially so if their views and inquiry have become politicized. Dr. Martin Kulldorff of Harvard's Medical School has recently commented on the present Covid-19 scientific and research environment by stating, "After 300 years, the Age of Enlightenment has ended."

Sadly, we must agree, that it's not just that the age of enlightenment has come to an end, but indeed, that the science itself has been politicized and severely corrupted.

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