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When COVID-19 claims of ‘revisionism’ and ‘misinformation’ are themselves misinformed: a narrative review with implications for policy decision-making

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A recent study described lockdown “revisionism” as spreading false information about lockdowns and other public health measures. This study examines the claim that simply questioning lockdowns or public health mandates is automatically labelled as “revisionism” or “misinformation.” We argue that terms like ‘revisionism’ and ‘misinformation’ are often used to dismiss well-supported, opposing views without seriously examining the best available evidence.

We point out that brushing over important topics without properly considering all the facts weakens these claims. We need open and honest debate to learn valuable lessons for the future. Labelling reasonable criticism as ‘misinformation’ or ‘revisionism’ blocks this process.

Finally, one of the main lessons from the COVID-19 pandemic is that the focus should not be on fighting so-called “misinformation” or “revisionism.” Instead, we should improve how decisions are made. This involves including experts from various fields, being transparent, carefully considering the pros and cons of different actions, and avoiding censorship and groupthink. These lessons are essential for the future of public health as it continues to learn from the pandemic.

Lockdown “revisionism” has been defined as spreading false information about lockdowns and other public health measures. We are concerned with terms like “revisionism” and “misinformation” because they often dismiss opposing, evidence-based conclusions without carefully evaluating the best available evidence. In this study, we use a recent publication by Murdoch and Caulfield, which discusses “lockdown revisionism,” to show how their claims often skip over important details without fully considering the strongest evidence. As a result, many of their statements don’t hold up under closer examination. Ironically, by doing this, Murdoch and Caulfield could be accused of engaging in the same “revisionism” they are trying to regulate and censor. However, we do agree with them on one key point: “People everywhere should develop the critical thinking and media literacy skills needed to see through misinformation.”

We didn’t conduct a formal, systematic review of the research. Instead, we critically analyzed the claims of misinformation made in the study by these so-called misinformation experts. We reviewed their references, which presumably represented the best evidence supporting their arguments, and then provided evidence supporting our own perspective. We acknowledge that our viewpoint may not align with the consensus of some official agencies, such as the WHO or CDC. However, we believe that even widely accepted opinions should be subjected to transparent and critical analysis. In fact, there have been significant disagreements between countries, particularly between North America and Europe, highlighting the need for open scrutiny of official claims (see Table 1 for examples).

Misinformation is generally defined as false or misleading statements, whether shared accidentally (misinformation) or deliberately (disinformation). In this study, we focus solely on misinformation without addressing its intent.

Critically examining claims of misinformation about pandemic responses is important for several reasons. First, misinformation can prevent people from understanding the true costs and benefits of significant interventions, which can lead them to make choices they otherwise wouldn’t. Second, misinformation can limit people’s ability to make informed decisions by making it harder to align their actions with their preferences and to reason about their moral responsibilities. This happens when misinformation promotes

false or unjustified beliefs, leading to a gap between people's concerns and actions and impairing their ability to think clearly about their moral obligations.

Our goal is to encourage thoughtful debate about claims of misinformation to help everyone better understand how effective – or ineffective – pandemic responses have been.

This review is structured as follows. First, we critically examine the claims of misinformation in the study. Second, we explore the key insights from this analysis. Finally, we conclude that the main lesson from the COVID-19 pandemic is not to focus more on fighting so-called misinformation and revisionism but to return to the principles of Emergency Management when making policy decisions, as described below.

Analysis of the Claims: Lockdowns

The Murdoch and Caulfield study claimed that “lockdowns” were framed as a false choice between strict or no measures, arguing that responses varied in severity and aimed to strike a complex balance. It also suggested that a meta-analysis of lockdown effectiveness was less convincing than other assessments, like the Oxford Stringency Index, which measures the strictness of lockdown measures. These claims are confusing. The meta-analysis in question has been updated several times, addressing earlier criticisms. It included studies that examined the impact of lockdown strictness, using the Oxford Stringency Index, on COVID-19 deaths. The conclusion from eight studies showed that, on average, lockdowns in Europe and the U.S. in early 2020 only reduced COVID-19 deaths by 3.2 per cent, which amounts to preventing around 6,000 and 4,000 deaths, respectively. To put this in context, this is much lower than the number of deaths typically caused by the flu each year.

To give further perspective, in 2019, there were over 58 million deaths worldwide. Between January 2020 and July 2023, there were about 6.95 million deaths related to COVID-19, making up roughly 3.29 per cent of global deaths during that time. If lockdowns prevented 3.2 per cent of COVID-19 deaths, that would only account for about 0.105 per cent of all deaths worldwide. While this is a simplified calculation, it helps provide some context for understanding the limited impact of lockdowns on overall mortality during the pandemic.

During the pandemic, the number of cases and deaths was often reported without enough context to help people interpret them correctly. For example, it's important to break down data by age group and provide rates (like the infection fatality rate) to understand the actual risks. Additionally, we need to compare COVID-19 deaths to other causes of death that society is generally willing to accept, such as deaths from tuberculosis, motor vehicle accidents, smoking, childhood diseases, and dietary risks.

Other studies have also found that stricter lockdowns didn't significantly reduce COVID-19 cases or deaths. For example, a Canadian study found little connection between stricter lockdowns and reduced case growth during the pandemic's first wave and none during the second wave. A recent systematic review confirmed similar findings, showing that stricter lockdowns prevented only 1 case for every 27.8 million people over three weeks and had no effect on death rates.

The assumption behind lockdowns was that reducing social interactions would stop the spread of the virus. However, lockdowns couldn't completely stop interactions and may have even shifted them to riskier settings, like multigenerational homes, essential businesses, and nursing homes, where the virus could spread more easily. Centralized lockdown mandates couldn't account for the varied risks people face in different situations, which individuals are better at managing based on their personal circumstances.

When studying lockdowns, it's important not to confuse correlation with causation. Many other factors influenced how the pandemic unfolded in different places, such as population density, healthcare access, and seasonal changes. Some studies have claimed lockdowns were effective, such as those referenced by the Lancet John Snow Memorandum, which said lockdowns were essential to reduce deaths.

However, these studies have been challenged by others who pointed out flaws in their methods or the use of inaccurate data.

In summary, while lockdowns may have had some effect on reducing COVID-19 deaths, the overall impact appears to be much smaller than initially thought. The complexity of the pandemic, with many factors influencing outcomes, means that it's crucial to critically evaluate claims about the effectiveness of such measures.

The Great Barrington Declaration Explained

The Great Barrington Declaration (GBD) has been described by some as “scientifically discredited,¹” referring to a paper by Caulfield and colleagues. However, “discredited” in this context seems to mean that a vocal group of respected scientists and government advisors criticized the GBD. They argued it introduced “controversy on uncontroversial topics” and contained “misinformed opinions,” including ideas labelled “unscientific.” Critics of the GBD claim it proposed “natural herd immunity” – the idea that allowing low-risk people to become naturally infected could protect high-risk people from the virus. Public health authorities and academics argued that this approach would lead to an “intolerable death toll” that could overwhelm healthcare systems, as it's impossible to fully protect only low-risk people, and it is uncertain who might be at higher risk. For instance, young people might develop lingering symptoms. Critics also pointed out that isolating certain populations might be unethical, noting that Sweden, which followed a less restrictive approach, had higher death rates than similar regions.

We do not agree that the GBD was “scientifically discredited.” These critiques lack substantial evidence and seem to avoid actual debate. For example, early data on the original strain of SARS-CoV-2 indicated that its fatality rate was generally low for people under 70. For instance, it was estimated that less than 0.1 per cent of infected individuals under 70 died from the virus, with rates being even lower among children and young adults. This suggested that SARS-CoV-2 was unlikely to overwhelm healthcare systems due to its impact on younger people. It was clear from early on that children were rarely severely affected by COVID-19, especially compared to illnesses like the flu, and that older people, especially those over 70, were at the highest risk, particularly those with multiple health issues. This clear difference in risk by age highlighted the need for focused protection of the most vulnerable rather than blanket restrictions.

Concerns about “long COVID” – lasting symptoms after initial infection – have been amplified by studies that often lack solid research methods. These studies usually did not have control groups and defined over 200 symptoms of varying severity, making it unclear how widespread or serious long COVID is. For children, the existence of long COVID is uncertain, as studies with control groups show no clear evidence.

It is puzzling to argue that isolating older people would have been unethical while enforcing isolation on the whole population was acceptable. Focused protection of older people could have been voluntary, not forced. As for Sweden, it has since been shown to have one of the lowest levels of excess deaths during the pandemic, with relatively modest economic consequences. Many suggestions for protecting the elderly without broad lockdowns have been offered, including by the authors of the GBD.

It's also important to clarify that not eliminating a virus doesn't mean herd immunity can't be achieved. For diseases like COVID-19, RSV, or the flu, where immunity after infection or vaccination doesn't completely prevent reinfection, a form of herd immunity still develops, reaching a stable level of immunity in the community. This “endemic equilibrium” helps limit the virus's impact, even though the virus can continue to circulate and reinfect as immunity naturally fades. In fact, when regular infections were interrupted during the COVID-19 pandemic, it created an “immunity debt,” making people more vulnerable to other endemic viruses.

While public support for the GBD may have been limited, this alone doesn't disprove its scientific value. Research has shown that the public's perception of COVID-19 risks was often exaggerated, influenced by fear or inaccurate information, representing a communication failure. Many people overestimated the risks and overlooked the benefits of natural immunity, as well as the fact that vaccinated people could still spread the virus. This misunderstanding led to unnecessary blame on certain groups, moral judgments, and acceptance of the "new normal." Moving forward, it's crucial to address misinformation accurately and hold media and health officials accountable for informing rather than sensationalizing to gain compliance.

Cost-Benefit Analysis of Public Health Responses

Vaccine Efficacy

The claim that vaccines have "prevented millions of deaths" is based on a mathematical model. However, such models assumed that vaccines prevent death and transmission and didn't factor in costs like adverse reactions. Models also often failed to predict COVID-19 cases and deaths accurately. While vaccines may have helped protect high-risk individuals from severe disease, data suggests their effectiveness has been overstated.

For instance, booster vaccines have been promoted to maintain immunity, but their benefits diminish over time. In fact, studies show that additional doses sometimes offered less protection over time against infections and severe cases. Among vaccinated people, particularly those with prior Omicron infections, more doses sometimes provided no extra protection against severe outcomes or death.

Studies have also raised concerns about "negative immune imprinting" – where frequent exposure to vaccines or infections reduces the immune system's response over time. Additionally, because nearly everyone globally has now been exposed to the virus, natural immunity remains strong and long-lasting. Current studies indicate that the chance of preventing one hospitalization or death through additional vaccinations would require an extremely high number of vaccinations, leading to significant costs without meeting the usual cost-benefit standards.

Vaccine Mandates

While vaccine mandates were meant to increase vaccination rates, data shows they had a minimal impact, generally increasing uptake by less than 1 per cent. For example, in Canada, mandates increased initial vaccine doses by only 0.9 per cent and had no impact on follow-up doses. In some cases, mandates even reduced the uptake of COVID-19 boosters and flu shots.

In England, a mandate for care home workers reduced unvaccinated staff but did not affect COVID-19 death rates among residents. In colleges, mandates did not significantly impact infection rates in surrounding communities. Also, studies didn't account for possible negative effects of mandates, such as adverse events in young people, including myocarditis – a heart inflammation condition that, although rare, can be serious in some young men.

Mask Efficacy

Claims about masks effectively reducing infection rates have relied on studies with significant weaknesses, such as low survey response rates and biases in data collection. For example, studies supporting mask use had inconsistencies, with some showing little to no effect of cloth masks, and others showing minimal impact of mask-wearing in specific groups.

The most reliable evidence, which includes randomized controlled trials, generally shows that community masking has little effect on the spread of respiratory viruses like COVID-19. For children, studies found no significant effect of masks in preventing COVID-19 spread in schools. Additionally, prolonged mask use in

children may have other impacts, like learning delays, difficulty recognizing emotions, and social development issues.

Public Health Measures Achieving Goals

Some claim public health measures largely achieved their intended goals. However, the evidence is mixed. A 2021 review of studies on COVID-19 restrictions found that only a few studies had low bias, and many combined multiple restrictions, making it hard to judge the effects of individual measures.

For example, in the U.S., a study found that COVID-19 mortality rates were not directly linked to specific mandates like mask requirements or business closures. Instead, mortality was higher in regions with poor pre-pandemic health and socioeconomic conditions, like limited healthcare access, poverty, and inequality. Restrictions were also linked to declines in educational achievement, with lower reading and math scores associated with mandates.

Economic Effects

Some assert that while strict restrictions hurt certain business sectors, Sweden's more relaxed approach did not benefit its economy compared to other Nordic countries. However, the economic impact of restrictions is complicated. Since most countries imposed similar measures, economies were interconnected, leaving even less-restricted economies, like Sweden, affected by the global downturn.

In Canada, restrictions were closely correlated with declines in retail sales, employment, and business activity, particularly during the first wave of the pandemic. However, when a mathematical model from the European Central Bank analyzed economic effects, it assumed that individuals would make decisions based only on their risk, ignoring effects on others, and that COVID-19 fatality risk for working adults was much higher than it actually was.

In the end, Sweden avoided much of the large new debt that countries like Canada now face and had one of the lowest rates of excess deaths among OECD countries from 2020 to 2023, along with less disruption to children's education.

Discussion and Implications

Confidence in Public Institutions

Murdoch and Caulfield argue that "lockdown revisionism" – re-examining the effectiveness of lockdowns – could cause "real harm" by setting a dangerous precedent. They believe it could erode trust in public institutions and reduce public willingness to comply with future life-saving measures during pandemics. They suggest that governments could address the spread of misinformation on social media through "increased regulatory scrutiny" and that health profession regulators should enforce evidence-based standards among their members.

While we agree that health professionals and politicians should base their actions on sound evidence, we are concerned by calls for "increased regulatory scrutiny" of social media and health professionals. Similar suggestions were made by Sule et al., who proposed regulatory action against physicians who spread misinformation about COVID-19, calling for a co-ordinated government response. During the pandemic, this approach led to an appearance of consensus among experts, which was partly due to censorship. This sense of "groupthink" and limited debate contributed to further censorship and a false impression of agreement among so-called experts.

Science progresses through open discussion and examination of evidence-based controversies. We believe this process was discouraged during the pandemic, and we argue that open debate should be encouraged, not stifled.

We also agree that “inaccurate historical accounts of public health responses should not be normalized.” Based on the evidence we reviewed, we believe Murdoch and Caulfield are themselves perpetuating some inaccuracies about the pandemic response. In our view, declining trust in public institutions, like health agencies and expert panels, results from policies that weren’t sufficiently evidence-based and a series of inaccurate claims. For instance, the U.S. CDC was reported to have made 25 major statistical errors, of which only 11 were later corrected. The CDC also recommended masking children as young as two, a policy extended into 2023, which raises questions about its ability to provide consistent, evidence-based guidance.

A review of 77 studies on masks published in a CDC journal found that while over 75 per cent of these studies concluded masks were effective, only 30 per cent actually tested mask efficacy, and fewer than 15 per cent showed statistically significant results. Sule et al. also appear to misrepresent the data, as they defined misinformation about vaccine and mask effectiveness as any claim that contradicted CDC guidelines, regardless of independent evidence.

An analysis by Canada’s Public Health Agency used a model that overstated the value of lockdowns, with reviewers describing it as flawed and unhelpful in evaluating these critical measures. Other mistaken assumptions in COVID-19 policy decisions have also come under scrutiny.

Trust in public institutions, once lost, is difficult to regain and must be earned back. We believe that policies labelled “necessary to save lives” were sometimes applied without a full assessment of evidence or cost-benefit considerations. Measures like strict lockdowns, mask mandates, and school closures, which were not generally recommended for a virus with the severity of COVID-19 in pre-pandemic plans, have proven ineffective and costly.

Rebuilding trust will require transparent discussion about mistakes made and acknowledgment of where public health measures fell short. Furthermore, the World Health Organization’s treaty, which is currently being negotiated and encourages a broad “all-of-government” approach to make lockdowns easier to implement, should not be supported.

What Went Wrong?

We believe the primary mistake during the COVID-19 pandemic was failing to follow the established emergency management (EM) process. Instead of relying on tried-and-tested pandemic response plans, leaders appeared to create new approaches from scratch, often disregarding cost-benefit analyses and accountability. Some post-pandemic reviews seem to be “re-discovering” this EM process that should have guided pandemic response all along.

The Emergency Management (EM) process involves preparing for, minimizing, responding to, and recovering from emergencies, whether natural disasters or health crises. An Emergency Management Agency (EMA) oversees the co-ordination response, including direct actions to address the immediate threat (like COVID-19 itself) and indirect issues caused by the pandemic and its response. EM principles apply to any public emergency, including pandemics. However, in this case, several critical mistakes were made, like not engaging all stakeholders or allowing open debate on response options.

Ignoring the EM process led to significant and predictable “collateral damage,” such as increased mental health issues, learning loss, unemployment, delayed healthcare, and rising social inequality. Research by Bardosh summarized this widespread harm, which was projected early in the pandemic to cause more long-term harm than the virus itself. Particularly affected were children, especially those from

disadvantaged backgrounds. Globally, the impacts were even worse, with increases in poverty, food insecurity, missed childhood vaccinations, and rising gender violence and inequality.

Measures like prolonged social isolation should have been a red flag due to their strong link to increased mortality. Additionally, human rights infringements and a drift toward authoritarian approaches are concerning outcomes of the pandemic response. A recent review even concluded that, worldwide, deaths directly from COVID-19 may account for only a portion of the “excess deaths” recorded during this period. Other deaths were likely due to healthcare disruptions, worsening chronic and infectious diseases, hunger, and mental health issues.

Public health, ideally, considers all aspects of health, not just one disease. The EM process is built to address foreseeable negative impacts and prioritize open discussion and evidence-based science, rather than relying on authority or broad claims of “The Science.”

A Defense of “We Didn’t Know” Isn’t Enough While some might argue, “We didn’t know” at the time, this defence is inadequate. Leaders implementing pandemic measures had a duty to consider both the benefits and potential harms. Before COVID-19, there was already extensive research showing that lockdowns, school closures, and community mask mandates likely wouldn’t offer enough benefit to justify their costs. At a minimum, leaders should have adhered to established pandemic plans and the EM process.

This also does not excuse dismissing experts who voiced concerns about these policies’ cost-benefit balance. For example, Caulfield and others responded to a newspaper editorial suggesting a pandemic response focused on protecting seniors, preparing hospitals, and replacing fear with confidence. Their response misrepresented the arguments, overstated the COVID-19 threat, and minimized the harms of lockdowns.

Additionally, as we learned more about COVID-19, critical findings were overlooked or not adopted into policy. Examples include evidence on the strength of natural immunity, the inability of vaccines to stop transmission, and data on the limited impact and potential harms of community masking and school closures.

To restore trust, we believe public health and government leaders owe the public an explanation and apology for how they handled the pandemic. We support an independent scientific review to assess the effectiveness and costs of COVID-19 policies. Such a review could provide a foundation for a future public inquiry into these unprecedented measures.

Limitations of This Paper One limitation of our paper is that it was not a comprehensive review of all pandemic literature. Instead, we focused on critically examining some of the best sources used to support the idea of “lockdown revisionism” or misinformation. In the spirit of evidence-based medicine, we aimed to present both sides of the debate and welcome open discussion on our findings.

Conclusion In summary, we draw three main conclusions:

1. We need open debate: Dismissing valid questions or labeling them “misinformation” or “revisionism” discourages the kind of rigorous discussion needed to learn from this experience.
2. Rediscover the EM process: Rather than fixating on so-called misinformation, future policies should rely on the EM process, involving a wide range of experts, transparency, and ongoing cost-benefit evaluations as new evidence emerges. This approach guards against censorship and groupthink.
3. An apology and accountability: To regain public trust, leaders may need to acknowledge mistakes, apologize, and support an independent commission to seek truth, accountability, and recovery.

These conclusions are essential for public health as they highlight ways to learn from the pandemic response and improve future resilience in public health crises.