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False that 1-4M lives saved by COVID-19 vaccination during 2020-2024

Denis G. Rancourt*[1] PhD

[1] Correlation Research in the Public Interest (correlation-canada.org)
* denis.rancourt@gmail.com

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Summary

The calculations and conclusions of Ioannidis et al. (2025) that 1.4 to 4.0 million lives were saved by COVID-19 vaccination during 2020-2024 are false. Their counterfactual calculation is based on a product of estimated deaths without intervention (without vaccination) and vaccine efficacy in preventing deaths. They do not use the usual epidemiological modelling of contagious spread to estimate the deaths without

intervention. Instead, they use seroprevalence data and reported COVID-19 deaths. They take vaccine efficacy to be that inferred from clinical trials. The seroprevalence data and clinical vaccine efficacy are unreliable and of no scientific value. The result is a meaningless illusion of life-saving benefit from COVID-19 vaccination, irrespective of being more modest than previous estimates.

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1 Introduction

Recently (published online: 25 July 2025), Ioannidis et al. (2025) calculated that 1.4 to 4.0 million lives were saved by COVID-19 vaccination during 2020-2024.

It is important to assess such claims made by leading scientists in the leading scientific literature because they may have a disproportionate influence on global public health practices and may present distorted views of past presumed successes.

Here, I show that the calculations and conclusions of Ioannidis et al. (2025) are false.

I made the same critical analysis of their final preprint version (v2: Ioannidis et al., 2024) in section 1 of Rancourt (2025).

Many other similar counterfactual calculations are also false. They are false because of incorrect assumptions and methods. They are also virtually never tethered to actual mortality data.

The general context here is one in which excess all-cause mortality during the Covid period is: excess mortality rate (0.392 ± 0.002 %) corresponding to 30.9 ± 0.2 million excess deaths globally for the 3-year period 2020-2022 (Rancourt et al., 2024). This means the excess all-cause mortality is at least one order of magnitude larger than the number of lives incorrectly inferred by Ioannidis et al. (2024, 2025) to have been saved.

2 Why it is false that 1-4M lives were saved by COVID-19 vaccination during 2020-2024

Ioannidis, with co-authors (2024, 2025), incorrectly projected that 1.4 to 4.0 million lives were saved by COVID-19 vaccinations worldwide, until October 2024. The underlying assumptions in their calculation are unjustified, as follows.

Their estimate is a counterfactual comparison but not a usual one that uses epidemiological modelling of contagious spread to estimate the deaths without intervention. Instead, they use seroprevalence data and reported COVID-19 deaths. Nonetheless, their analysis illustrates the core difficulties with all epidemiological counterfactual and forecast models based on presumed vaccine efficacy and estimated mortality if vaccination had not been implemented.

The said core difficulties are this. One must derive the number of deaths, D0, that should occur from the presumed pathogen in the absence of the intervention (i.e., without vaccination) and use an estimate of the vaccine efficacy, Ev, in preventing

deaths. Ev is the vaccine-attributed reduction of probability of death per person presumed to be fatally infected. In simple terms, the number of lives saved, Ls, (or deaths averted) is then the product of D0, Ev and vaccine coverage Cv:

$$Ls = D0 \times Ev \times Cv. \qquad (1)$$

Cv can be known with relative certainty, whereas D0 and Ev are disjunctively and irreparably problematic. Ioannidis et al. (2024, 2025) do not resolve or sufficiently recognize these problems:

1. They take vaccine efficacy, Ev, to be as derived from clinical trials, without due skepticism, despite the healthy skepticism prominently expressed by Ioannidis in the past regarding medical research in general (Ioannidis, 2005), and clinical trials in particular (Ioannidis, 2016a, 2016b).
2. They estimate D0 from available seroprevalence data, combined with estimates of infection fatality rates (IFRs), which in turn rely on seroprevalence data and reported COVID-19 deaths, without sufficiently questioning the validity, specificity and validation of the seroprevalence tests or assays (they treat the tests as a valid blackbox technology), not to mention the questionable validity of reported COVID-19 deaths used in calculating the IFRs.

Antibody tests (seroprevalence) approved for presumed COVID-19 and used in high-profile epidemiological studies have been shown to be invalid (e.g., Rancourt, 2021). In general, the seroprevalence tests used are non-specific, in-effect not tested for specificity, not tested for false positives, not tested in the in vitro, animal model, clinical, and field environments, not based on fully validated pure standard analytes (none are available), and are manufactured for profit in global emergency approval circumstances, while being associated with a disease diagnosis (clinical symptoms or PCR or antibody test) which is itself ill-defined.

Regarding the likelihood that published clinical trial findings of COVID-19 vaccine efficacy are valid, the landmark report of Gøtzsche (2013) leaves little doubt that such trials for any vaccine cannot be trusted whatsoever, given the structural nature of the industry, not to mention the exceptionally politicized and captured institutional context of the declared COVID-19 pandemic.

One should be cognizant of the following partial generic list provided by Smith (2005), which did not disappear in the Covid period:

> Examples of Methods for Pharmaceutical Companies to Get the Results They Want from Clinical Trials
>
> • Conduct a trial of your drug against a treatment known to be inferior.
> • Trial your drugs against too low a dose of a competitor drug.
> • Conduct a trial of your drug against too high a dose of a competitor drug (making your drug seem less toxic).
> • Conduct trials that are too small to show differences from competitor drugs.
> • Use multiple endpoints in the trial and select for publication those that give favourable results.
> • Do multicentre trials and select for publication results from centres that are favourable.
> • Conduct subgroup analyses and select for publication those that are favourable.
> • Present results that are most likely to impress—for example, reduction in relative rather than absolute risk.

Also, Ioannidis et al. (2024, 2025) perform their projection of lives saved without tethering their estimate to measured all-cause mortality (by time, by jurisdiction, and by age group). They simply neglect to examine any connection to hard mortality data and they state, under the heading “General principles”, in their Appendix 1 (Ioannidis et al., 2024):

> “In calculating our estimates, we do not consider deaths and other consequences from adverse effects of SARS-CoV-2 vaccines, nor do we make any adjustment for the quality of life-years saved.

> Moreover, we do not attempt to calculate indirect effects of COVID-19 vaccination which may have modulated excess deaths through an impact on non-COVID-19 causes of death."

In the Supplementary Information of the published paper, this became (Ioannidis et al., 2025, SI, eAppendix 1):

> "In calculating our main estimates, we do not consider separately deaths and other consequences from adverse effects of SARS-CoV-2 vaccines, nor do we make any adjustment for the quality of life-years saved. Moreover, we do not attempt to calculate indirect effects of COVID-19 vaccination which may have modulated excess deaths through an impact on non-COVID-19 causes of death."

It is a common characteristic of counterfactual and forecasting models reporting on benefits of interventions not to attempt to tether their often fantastic results to hard all-cause mortality data (e.g., Rancourt and Hickey, 2023).

3 Discussion

3.1 A flood of false counterfactual calculations of vaccine benefit

In recent years tentative and untethered models of epidemiological forecasting and epidemiological counterfactual analyses producing unlikely results have flooded the medical literature, including in leading journals.

These models incorrectly and uncritically rely entirely on estimates of vaccine efficacy and not on any field observations whatsoever of actual deaths and their specific individual-level circumstances.

The said flood of these kinds of models is cause for legitimate concern regarding public health policy guidance. In the words of Ioannidis et al. (2022):

> "Epidemic forecasting has a dubious track-record, and its failures became more prominent with COVID-19. Poor data input, wrong modeling assumptions, high sensitivity of estimates, lack of incorporation of epidemiological features, poor past evidence on effects of available interventions, lack of transparency, errors, lack of determinacy, consideration of only one or a few dimensions of the problem at hand, lack of expertise in crucial disciplines, groupthink and bandwagon effects, and selective reporting are some of the causes of these failures. …" (Abstract, p. 423)

> "… Poorly performing models and models that perform well for only one dimension of impact can cause harm. It is not just an issue of academic debate, it is an issue of potentially devastating, wrong decisions (ref)." (p. 432)

In counterfactual analysis "the outcomes of the intervention are compared with the outcomes that would have been achieved if the intervention had not been implemented." (BGI Consulting, 2007)

The present lack of standards in forecasting and counterfactual exercises gives more than a little credence to the words of former *Lancet* editor Richard Horton (2004):

> "… medical journals have become an important but underrecognized obstacle to scientific truth-telling. Journals have devolved into information-laundering operations for the pharmaceutical industry."

And more than a little credence to the thesis of former *BMJ* editor Richard Smith (2005):

> "Medical journals are an extension of the marketing arm of pharmaceutical companies."

The publishing surge of at best questionable forecasting and counterfactual models of mortality averted by vaccination campaigns and programmes is not unrelated to the

tsunami of systematic reviews and meta-analyses used in-effect to cover up wholly inadequate and outright concocted clinical trials of vaccine efficacy (Gøtzsche, 2013; Ioannidis, 2016a, 2016b), on which the models are based.

A few examples of demonstrably false models in the COVID-19 context are as follows.

Rancourt et al. (2022) showed that a counterfactual analysis published by Canadian government scientists, concluding that approximately 1 million lives had been saved by government COVID-19 measures in Canada, including vaccination, is untenable.

Rancourt and Hickey (2023) showed that the counterfactual analysis of Watson et al. (2022), published in *The Lancet Infectious Diseases* and concluding that some 14 to 20 million worldwide deaths were prevented by COVID-19 vaccinations, is impossible.

Rancourt (2025) showed that counterfactual models that purport to calculate regional or global infant mortality averted by vaccine programmes are invalid.

Separately, and contrary to the Watson et al. (2022) counterfactual, Rancourt et al. (2023, 2024) showed that COVID-19 vaccination rollouts are systematically and strongly associated in time with surges and peaks in excess all-cause mortality, quantified to approximately 17 million vaccine-rollout-associated excess deaths worldwide during the declared pandemic. See the discussion of this number of vaccine-rollout-associated deaths by Rancourt (2024).

There are many more failures of epidemiological modelling of the declared COVID-19 pandemic than the few mentioned above (Ioannidis et al., 2022). There is a COVID-19 flood of epidemiological modelling, possibly motivated by rising Covid-era vaccine hesitancy of parents in the Western world (Lazarus et al., 2023).

3.2 The clinical trials for vaccine safety and efficacy are inadequately designed, contrived and invalid

The published clinical trials of vaccine efficacy cannot be taken to be valid because the entire clinical trial and publication process is overwhelmingly controlled by an industry making large profits from the vaccines, and this industry has amply, historically, consistently and repeatedly demonstrated its willingness to act fraudulently at the expense of endangering the public (Gøtzsche, 2013). Gøtzsche (2013)'s landmark documented overview proves that the degree of deceit and corruption is astronomical and deeply entrenched. Reasonable researchers must conclude that clinical trial evaluations of vaccine efficacy are unusable. See also the career-informed corroborating assessments of editors at leading medical journals: *Lancet*, Horton (2004); and *BMJ*, Smith (2005).

Even relying solely on the tunnelled and sanitized published scientific-journal reports — without any inside knowledge or access to the industry-locked patient-level trial data — many academic researchers had in 2003 already demonstrated a strong (4-fold) funding bias in published results (reviews: Bekelman et al., 2003; Lexchin et al., 2003). See also: Elisha et al. (2021).

Irrespective of the overwhelming evidence of corruption in the conduct of clinical trials, Krauss (2018) explained that defining features of randomized clinical trial design make them intrinsically unreliable in most applications, in his article entitled "Why all randomised controlled trials produce biased results" (Krauss, 2018). Major problems identified by Krauss are many and include these structural features:

1. The selection (so-called enrolment) of trial participants (prior to randomization) is: (a) not random; (b) not transparent; and (c) not representative of the actual in-field target population for the intended medical intervention.
2. Even in the absence of outright manipulation, the applied randomization in-practice does not result in comparable control and intervention arms.

3. These and other aspects of the trials are susceptible to bias and interference, not to mention blocking and burying trials and data that are not desirable to the industry.
4. There is no transparency regarding in-trial enrolment and in-trial exclusions of counted participants.

Regarding lack of transparency, in the words of Mangin et al. (2018), in the Western-nation geriatric context, their 6th recommendation is:

> "6. Acknowledge and address commercial influences on polypharmacy: trial results should not be implemented in older adults unless access to all available patient-level data is provided. Appropriate outcome measures should be required before licensing indications that include older populations.
>
> The degree to which commercial interests can potentially distort scientific data is well documented [126,127,128,129,130,131]. Trials can be structured to provide commercially favorable results and there is limited access to patient-level trial and adverse-event data, which are grounds for precautionary prescribing [132]. Use of intermediate outcomes, publication bias, and overhyping of new or immature research results by media and pharmaceutical companies result in a research narrative that overestimates efficacy, underestimates harms, and fuels IMUP [inappropriate medication use and polypharmacy] [133,134,135]. Evidence bias is commonly compounded by biased interpretation, where key opinion leaders have industry conflicts of interest [136]."

Access to all patient-level data (not just "available" patient-level data, including patients that were excluded in the in-trial process) is essentially never granted to independent or competing researchers by the controlling pharmaceutical corporation, in any clinical trial, and can be presumed to be in-effect hidden from even the government agencies. Therefore, following the above-noted principle expressed by Mangin et al. (2018), "trial results should not be implemented". I don't see any good reason why this principle would not be universally applied in all circumstances in which a clinical trial is needed to

tease out any benefit from the promoted medical intervention, or in which a small number of dropped or different patients could make the claimed benefit disappear.

Regarding frail and vulnerable individuals, unhealthy subjects are not enrolled in a clinical trial, whereas, in practice, unhealthy subjects are vaccinated. That unhealthy subjects are routinely vaccinated is clear (e.g., Rancourt, 2022). Furthermore, clinical trial enrolment exclusion criteria are strictly imposed (and are not applied transparently), whereas the in-field decision not to vaccinate because of poor health is more fluid and left to individual clinical or practitioner judgement.

3.3 Mortality factors other than vaccination are overwhelmingly more important than any presumed vaccine benefit

As mentioned above, excess all-cause mortality (from all causes) during the Covid period is: excess mortality rate (0.392 ± 0.002 %) corresponding to 30.9 ± 0.2 million excess deaths globally for the 3-year period 2020-2022 (Rancourt et al., 2024).

This means the excess all-cause mortality is at least one order of magnitude larger than the number of lives saved incorrectly calculated by Ioannidis et al. (2024, 2025).

The efforts to find a benefit from COVID-19 vaccination are therefore palpably unreliable and seem displaced if public health is truly the concern. In fact, excess mortality during the Covid period had little to do with a virus SARS-CoV-2 and was apparently due to the complex measures and responses regarding a declared pandemic (Hickey et al., 2025).

4 Conclusion

> “By glossing over the depth and complexity of the real issues involved and by relentless repetition, certain statements and concepts have acquired a quite unjustified credibility.”
> (England, 1978)

That COVID-19 vaccination saved lives is an unjustified belief that is not informed by the counterfactual study of Ioannidis et al. (2025) or any other published study.

The calculations and conclusions of Ioannidis et al. (2025) are false.

There are essentially no usable, relevant and unbiased policy-grade clinical trials of COVID-19 vaccine efficacy, and COVID-19 vaccine efficacy has never been reliably demonstrated in observational or ecological studies free of design bias.

To my knowledge, having examined data from hundreds of jurisdictions, there is no known example of a drop in measured all-cause mortality temporally associated with or following any rollout of a COVID-19 vaccination campaign. In fact, in Western jurisdictions, 2022 was generally the highest year of excess all-cause mortality in 2020-2024, following universal (all ages) vaccination and boosters in 2021.

The overwhelming cause of high mortality during the Covid period appears to be structurally imposed assaults by measures and responses against frail, elderly and poor individuals. This cause and its institutionalization are not being addressed.

In this context, the theoretical modelling papers of vaccine benefit are merely in-effect part of the problem.

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