

A fiasco in the making: More data is not the answer to the coronavirus pandemic

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On March 17, John Ioannidis published a column in which he downplays descriptions of coronavirus as a “once-in-a-century pandemic”, instead calling the worldwide response “a once-in-a-century data fiasco” [4]. The main thrust of the article, which I address in points (i)-(iii) below, is that we still know very little about the disease, its fatality rate, and the overall risks it poses to public health; and that in face of this uncertainty, we should seek additional data in order to make evidence-based policy decisions. Ioannidis’s call for additional evidence and study may be fully appropriate in every other research setting one could imagine. But it is wholly inappropriate for handling dynamic and complex problems in real time. The article makes no definitive claims, but plants seeds of confusion and sheds plenty of doubt about the worldwide effort to fight the pandemic. If the viewpoint in Ioannidis’s column were shared by even a small fraction of the general public or by anyone in a position of authority—president, governor, mayor, school superintendent—its consequences could be severe. The virus would continue to spread indefinitely, infecting tens or hundreds of thousands, further overwhelming the healthcare system, leading to unnecessary deaths and total disaster.

Ioannidis acknowledges the lack of information available in the midst of an evolving situation. In the face of this uncertainty, his instinct is to (i) compare the statistics on coronavirus with the flu, (ii) cite wide uncertainties about the exact values of mortality rate and number of cases and (iii) request additional evidence before deciding how to act further. This is dangerous and potentially deadly. I address these three major points below. (The full article is linked in the references.)

(i) The comparisons to the flu are unfounded, especially in light of everything coming out of the medical communities and people who’ve recovered from the disease. Even Ioannidis acknowledges, “In the most pessimistic scenario, which I do not espouse, if the new coronavirus infects 60% of the global population and 1% of the infected people die, that will translate into more than 40 million deaths globally, matching the 1918 influenza pandemic.” No matter how unlikely this may be, it’s bad enough to undermine Ioannidis’s entire argument. As I and many others have written before [2, 3, 5, 6], in the face of a low probability, high consequence outcome, all possible steps must be taken to decrease the probability and mitigate the consequences.

(ii) We are operating under severe uncertainty. By Ioannidis’s own admission, the worst-case scenario rivals the 1918 Spanish Flu. In Ioannidis’s best-case scenario, he estimates the U.S. mortality rate to be 0.05%, “lower than seasonal influenza”. He cautions that “locking down the world with potentially tremendous social and financial consequences may be totally irrational.” Under severe uncertainty, it’s natural instinct and common sense to hope for the best, but prepare for the worst. Ioannidis’s projection of a 0.05% fatality rate instead assumes the best without any protection against the most likely case, let alone the worst case.

(iii) Ioannidis wants more data to sharpen estimates of the number of cases and the fatality rate. As of March 17, there have been more than 197,000 confirmed cases of coronavirus and nearly 8,000 deaths in well over 100 countries worldwide [1]. In reality, there are many more cases, of those without symptoms or who have not been tested. There’s no other way to say this: the exact numbers are irrelevant. Given the severity of what we’ve already seen and the uncertainty of where we might be headed, the prudent approach is most definitely *not* to wait to sharpen our estimates. If there’s a chance that we’re underestimating cases by a factor of 300 (as Ioannidis alludes), then let’s assume we’re off by 300 and act accordingly. Whatever the case numbers are today, they’re likely to double (or worse) within a week if serious steps aren’t taken. The situation is bad, and it will only get worse if we’re lulled into a false sense of security by Ioannidis and others making similar calls for calm.

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Some may quickly dismiss Ioannidis's article as wrongheaded and distracting from the real problem. But some will not. Some will be inclined to give him the benefit of the doubt, as someone pausing to ask critical scientific questions at a time of worldwide panic. Those who don't appreciate the serious negative consequences of Ioannidis's article are missing a crucial point. Ioannidis has had a distinguished scientific career which has given him an elevated platform to influence people who make decisions at the highest levels. There's little doubt that Ioannidis's opinions are carefully considered, but the opinions expressed in his article are tailored to academic work, not a global crisis. Ioannidis's column reads like an ordinary academic opinion piece, as it would be written during any other time, about any other topic. It reflects no sense of urgency—in fact, it emphasizes the opposite of urgency—it severely downplays the severity of the circumstances, and it sends the wrong message to anyone who reads it.

Ioannidis's message runs the risk of delaying critical response and desensitizing the public to the real risks we face. For a dynamic and complex problem such as coronavirus, we always want more information, but we have to deal with what we have. This isn't an academic research project. It's real life, in real time. In the face of severe uncertainty, we can't delay action waiting for more evidence or brush off catastrophic risks on grounds that it's irrational to take drastic countermeasures.

References

- [1] Johns Hopkins Coronavirus Map. (<https://coronavirus.jhu.edu/map.html>).
- [2] The Precautionary Principle. (<https://www.fooledbyrandomness.com/PrecautionaryPrinciple.html>).
- [3] H. Crane. Naive Probabilism. *Researchers.One*, (<https://www.researchers.one/article/2020-03-9>), 2020.
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- [6] J. Norman, Y. Bar-Yam, and N. Taleb. Systemic Risk of Pandemic via Novel Pathogens – Coronavirus: A Note. (<https://neesi.edu/systemic-risk-of-pandemic-via-novel-pathogens-coronavirus-a-note>), 2020.