Peer Community In Mathematical & Computational Biology

Modeling the effect of lockdown and other events on the dynamics of SARS-CoV-2 in France

Valery Forbes based on reviews by Wayne Landis and 1 anonymous reviewer

A recommendation of:

Louis Duchemin, Philippe Veber, Bastien Boussau. **Bayesian investigation of SARS-CoV-2-related mortality in France** *(2020), medRxiv, 2020.06.09.20126862, ver. 5 peer-reviewed and recommended by Peer Community in Mathematical & Computational Biology.* https://doi.org/10.1101/2020.06.09.20126862

Open Access

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Valery Forbes (2020) Modeling the effect of lockdown and other events on the dynamics of SARS-CoV-2 in France. *Peer Community in Mathematical and Computational Biology, 100001.* 10.24072/pci.mcb.100001

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This study [1] used Bayesian models of the number of deaths through time across different regions of France to explore the effects of lockdown and other events (i.e., holding elections) on the dynamics of the SARS-CoV-2 epidemic. The models accurately predicted the number of deaths 2 to 3 weeks in advance, and results were similar to other recent models using different structure and input data. Viral reproduction numbers were not found to be different between weekends and week days, and there was no evidence that holding elections affected the number of deaths directly. However, exploring different scenarios of the timing of the lockdown showed that this had a substantial impact on the number of deaths. This is an interesting and important paper that can inform adaptive management strategies for controlling the spread of this virus, not just in France, but in other geographic areas. For example, the results found that there was a lag period between a change in management strategies (lockdown, social distancing, and the relaxing of controls) and the observed change in mortality. Also, there was a large variation in the impact of mitigation measures on the viral reproduction number depending on region, with lockdown being slightly more effective in denser regions. The authors provide an extensive amount of additional data and code as supplemental material, which increase the value of this contribution to the rapidly growing literature on SARS-CoV-2.

References

[1] Duchemin, L., Veber, P. and Boussau, B. (2020) Bayesian investigation of SARS-CoV-2-related mortality in France. medRxiv 2020.06.09.20126862, ver. 5 peer-reviewed and recommended by PCI Mathematical & Computational Biology. doi: 10.1101/2020.06.09.20126862

Revision round #1

2020-08-03
Dear Author,

Your preprint received two generally positive reviews. Both reviewers provided thoughtful comments and suggestions that, if addressed, will strengthen your preprint. I would ask you to please address the reviewers' concerns and resubmit your revised preprint with an indication of how you have addressed their comments.

Sincerely,

Valery Forbes

Preprint DOI: https://www.medrxiv.org/content/10.1101/2020.06.09.20126862v2

Reviewed by Wayne Landis, 2020-08-03 17:12

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Reviewed by anonymous reviewer, 2020-07-28 22:49

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Author's reply:

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