

Reporting Summary

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Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

- | | |
|-------------------------------------|--|
| n/a | Confirmed |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/> The statistical test(s) used AND whether they are one- or two-sided
<i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> A description of all covariates tested |
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| <input type="checkbox"/> | <input checked="" type="checkbox"/> A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals) |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
<i>Give P values as exact values whenever suitable.</i> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated |

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection MATLAB 2020a (https://github.com/Priesemann-Group/covid19_tti and Supplementary Dataset 1) All data used in this study is generated in the plotting routines, available in the GitHub repository. Alternatively, an interactive platform for simulating scenarios different from the herein presented is available on <http://covid19-tti.ds.mpg.de>, and users may download the data generated. DOI: 10.5281/zenodo.4290679

Data analysis MATLAB 2020a (https://github.com/Priesemann-Group/covid19_tti). DOI: 10.5281/zenodo.4290679

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

Data used in this study was obtained through numerical simulation, and it is available together with the code for solving our model's equations for default and user-customized parameters at https://github.com/Priesemann-Group/covid19_tti. Alternatively, an interactive platform for simulating scenarios different from the herein presented is available on <http://covid19-tti.ds.mpg.de>, and users may download the data generated.

Field-specific reporting

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Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	Quantitative modelling study on the spreading dynamics of COVID-19.
Research sample	Numerical experiments using empirical epidemiological parameters tailored to the case example Germany, given the experience of the group working with local data.
Sampling strategy	No sample size was calculated for Supplementary Figure 2. As input distributions in the error propagation were well-known, and the resulting distribution was smooth, a sample size of 10^5 seemed reasonable.
Data collection	Empirical epidemiological parameters were selected to resemble, through simulation, expected and observed trends in Germany. All data, besides those parameters that are explicitly referenced in the manuscript, was obtained through simulation.
Timing	n/a, as selected parameters do not have a temporal dependency and all data was obtained through simulation.
Data exclusions	No data were excluded from the analyses.
Non-participation	n/a, as our manuscript presents a simulation-based study.
Randomization	n/a, as our manuscript presents a simulation-based study, where the effect of parameters was linked deterministically with the outcome.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems		Methods	
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