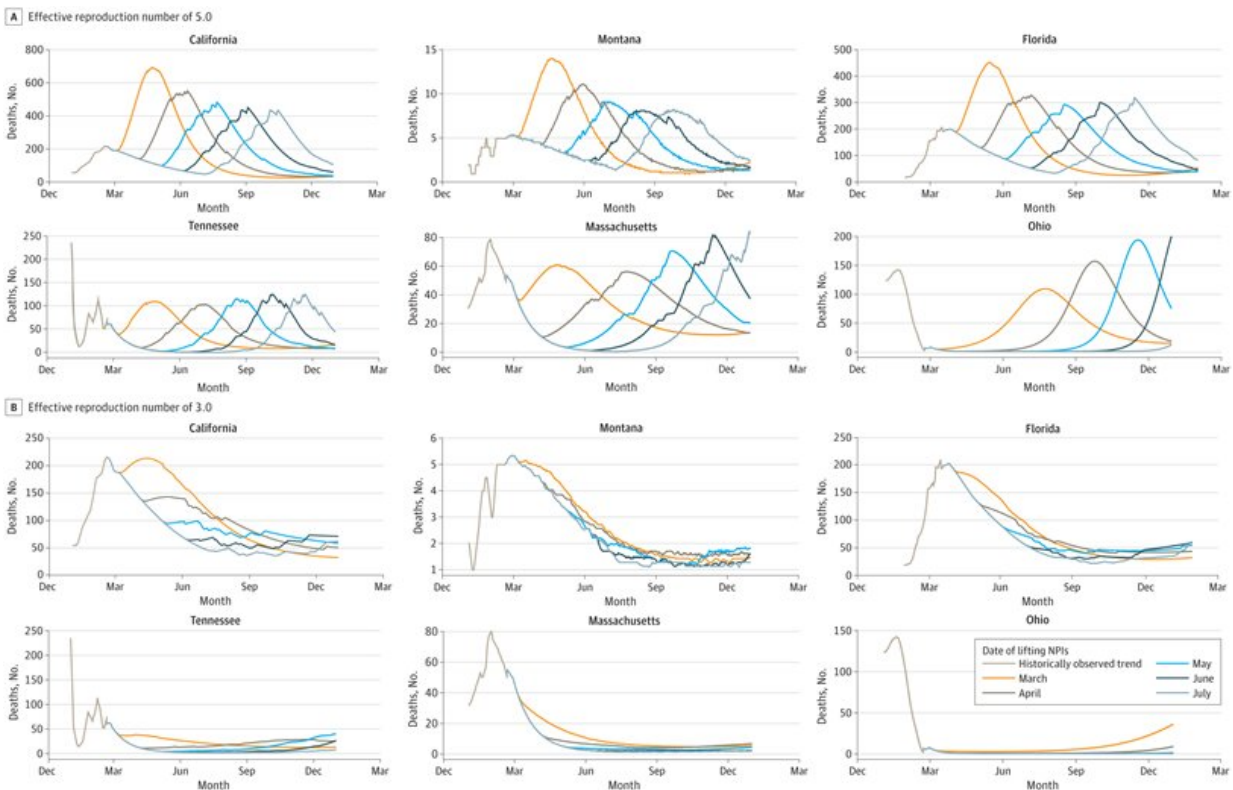


Study predicts COVID-19 deaths will rebound when all restrictions are lifted

April 4 2022, by Tracy Hampton



Projected COVID-19 Incident Deaths Model-based projections of COVID-19 deaths in 2022 following the lifting of nonpharmacologic interventions in California, Montana, Florida, Tennessee, Massachusetts, and Ohio, assuming an effective reproduction number of 5.0 (A) and 3.0 (B). Credit: *JAMA Health Forum* (2022). DOI: 10.1001/jamahealthforum.2022.0760

As COVID numbers fall and mandates lift, the question remains: Is it possible to avoid trade-offs between returning to pre-pandemic lifestyles and an uptick in COVID-19-related deaths?

To find an answer, investigators at Massachusetts General Hospital, Boston Medical Center, and Georgia Tech conducted a simulation study that projected the future of the COVID-19 pandemic in every state.

The analysis, which is published in *JAMA Health Forum*, assumes the current pace of vaccination is maintained into the future, and models different dates of lifting mandates. In most states, relaxing masking mandates and other restrictions resulted in some "rebound" in COVID-19-related deaths; however, delaying the date of lifting mandates did little to lessen the eventual rise in deaths.

"The inevitable rebound in mortality was directly attributable to the [omicron variant](#)—when we repeated the analysis, assuming the infectivity of the previous alpha and delta variants, the model did not project such rising mortality after relaxing mask mandates," says co-first author Benjamin P. Linas, a professor of medicine at Boston University School of Medicine.

One of the strongest predictors of the extent of the rebound surge in mortality after relaxing mandates was the degree of immunity in the community at the time of lifting the mandate. Therefore, communities with a high percentage of residents who are vaccinated and/or who have had COVID-19 are likely to have lower death rates.

"A difficult trade-off lies on the horizon," says co-senior author Jagpreet Chhatwal, director of MGH's Institute for Technology Assessment.

"While there is ample evidence in our analysis that a March 2022 lifting date leads to rebound mortality in many states, the simulation also suggests that with the omicron variant, whenever states do remove

mandates will face the same difficult choice between increased COVID-19 mortality and the freedoms of returning to a pre-pandemic norm."

"The one intervention that can mitigate this impossible choice is ongoing COVID-19 vaccination with boosters," adds Chhatwal, who is also an assistant professor at Harvard Medical School.

Even though a delay in lifting mask mandates or restrictions on social gatherings will likely not entirely prevent future surges in COVID-19-related deaths, the findings could potentially aid state public health officials as they weigh different options. "Arguments to remove restrictions must explicitly make the case for lifting restrictions within a cost-benefit framework examining the cost of restrictions versus the cost of COVID-19 mortality," says co-first author Jade (Yingying) Xiao, a Ph.D. student at Georgia Tech. "At the same time, those who favor maintaining restrictions must recognize that 'just a little longer' will not suffice."

The researchers note that the highly transmissible delta and omicron variants will likely continue to take a major toll across the country, but if a less transmissible viral strain were to become dominant, rebounding morbidity and [mortality](#) rates would be substantially lower. "Were this the case, it would likely be possible to more safely remove [restrictions](#) at the beginning of the second quarter of 2022," says co-senior author Turgay Ayer, director of Business Intelligence and Healthcare Analytics at the Center for Health and Humanitarian Systems at Georgia Tech.

More information: Benjamin P. Linas et al, Projecting COVID-19 Mortality as States Relax Nonpharmacologic Interventions, *JAMA Health Forum* (2022). [DOI: 10.1001/jamahealthforum.2022.0760](https://doi.org/10.1001/jamahealthforum.2022.0760)

Provided by Harvard University

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