

COVID-19 transmission rebounds quickly after physical distancing rules are relaxed

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Across the U.S., the relaxation of statewide physical distancing measures that are designed to control the COVID-19 pandemic frequently resulted in an immediate reversal of public health gains against SARS-CoV-2, the virus that causes the disease, researchers from Massachusetts General

Hospital (MGH) and colleagues reported.

Looking at data from all 50 states and the District of Columbia, the researchers found a gradual but steady decline in viral transmission rates during the eight weeks immediately preceding relaxation of physical distancing rules. But almost immediately after those rules were relaxed, most states reversed course. Eight weeks after restrictions were lifted or loosened, only nine of 51 still had low rates of transmission.

"Premature relaxation of social distancing measures undermined the country's ability to control the disease burden associated with COVID-19," writes Alexander C. Tsai, MD, investigator in the Department of Psychiatry at MGH and associate professor of Psychiatry at Harvard Medical School, and colleagues in the journal *Clinical Infectious Diseases*.

Tsai continues: "COVID-19 is disproportionately killing so-called essential workers, poorer people, and racialized minorities. In the absence of public health leadership at the federal level, these lockdowns are the best tool we have to slow transmission. But there are real costs to these lockdowns, costs that are again inequitably borne by so-called essential workers, poorer people, and racialized minorities, as well as children in public school programs who disproportionately miss out on school. So [local governments](#) need to continue to weigh the risks and benefits of these policies, and not be convinced that once you relax, there is no turning back."

The investigators previously reported that statewide physical distancing measures were associated with a reduction in the growth rate of COVID-19 cases in the U.S. and a short-term reduction in COVID-19 related deaths. Results of that study were published August 11, 2020 in the open-access journal *PLOS Medicine*.

"Essentially the moment those restrictions were released, those trends reversed," says Mark J. Siedner, MD, MPH, an investigator in the Division of Infectious Diseases at MGH, an associate professor of Medicine at Harvard Medical School (HMS), and senior author of the study.

The team found that this reversal occurred regardless of the type of restriction: school closings, restaurant/bar closings, workplace rules, limiting public events, closing of outdoor recreational facilities, and limits on in-state travel.

Tsai and colleagues used data from state governments and third-party sources and regression modeling to estimate the extent to which relaxation of physical distancing measures affected control of COVID-19, expressed as a value represented by the number R_t .

" R_t is the average number of people each person with COVID-19 will infect," Siedner says. "The goal of every public health intervention should be to get the R_t down to less than one, because if each person on average infects less than one other person, ultimately the epidemic will be extinguished."

The data showed that the R_t , averaged across jurisdictions, declined by 0.012 units per day in the eight weeks leading up to relaxation of restrictions, with 46 of the 51 jurisdictions studied achieving an R_t below one while the measures were in place.

After physical distancing regulations were relaxed, the transmission rate increased by an average of 0.007 units per day. Eight weeks into the relaxation period, the average R_t was 1.16, and only nine of the 51 jurisdictions had R_t rates that remained below one.

Siedner adds: "The hope was that these measures would lead to sustained

changes in behavior: mask wearing and physical distancing. These data do not give us hope. Until a vaccine is available, these measures are proving to be the most effective solutions to contain epidemic hotspots."

More information: Alexander C Tsai et al. COVID-19 transmission in the U.S. before vs. after relaxation of statewide social distancing measures, *Clinical Infectious Diseases* (2020). [DOI: 10.1093/cid/ciaa1502](https://doi.org/10.1093/cid/ciaa1502)

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