

Factors causing low COVID-19 vaccination have spilled over to lower flu vaccination rates

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A new study from UCLA researchers indicates a previously undocumented impact of widespread COVID-19 vaccine promotion on

other public health behaviors. Adult flu vaccination rates have declined in states with low rates of COVID-19 vaccination, which the authors say may be a harbinger of declining trust in public health, suggesting that COVID-19 vaccination behavior has spilled over to flu vaccination behavior. The finding is published in *The New England Journal of Medicine* as a letter to the editor.

"It is alarming that controversy surrounding COVID-19 vaccination may be undermining separate [public health](#) efforts that save thousands of lives each year," says the study's lead author Richard Leuchter, MD, a resident physician at UCLA Health and the David Geffen School of Medicine. "Many Americans who never before declined a routine, potentially life-saving [vaccine](#) have started to do so. This supports what I have seen in my clinical practice and suggests that information and policies specific to COVID-19 vaccines may be eroding more general faith in medicine and our government's role in public health."

The authors used publicly available data from the Centers for Disease Control and Prevention (CDC) collected through January 2022 to evaluate how flu vaccination rates changed during the pandemic based on state-wide rates of COVID-19 vaccination.

Flu vaccination rates for the first flu season of the pandemic (2020-2021), which pre-dated the widespread availability of COVID-19 vaccines, remained relatively stable across all states. However, in the second flu season of the pandemic (2021-2022), which was after widespread promotion of COVID-19 vaccines, flu vaccination rates dropped 4.5 percentage points (from 43.7% to 39.2%) in states with below-average rates of COVID-19 vaccination. Conversely, states with the highest uptake of COVID-19 vaccines saw increases in average flu vaccination rates of 3.8 percentage points (from 49.0% to 52.8%).

The authors say these findings taken together suggest that COVID-19

vaccination behaviors have spilled over to other public health behaviors, in this case flu vaccination. They explain that this relationship works in both directions: factors causing low COVID-19 vaccination rates (e.g., mistrust of COVID-19 vaccines, concerns about side effects, lack of trust in government) are linked to declines in flu vaccination compared to pre-pandemic times, whereas factors causing high rates of COVID-19 vaccination are spilling over to increase flu vaccination rates.

The authors propose that both of these trends may be explained by something called belief generalization. "Much as someone's decision to wear or forgo a mask in public during the early pandemic was linked with their more general beliefs through the idea of 'belief signaling', we propose that 'belief generalization' may account for COVID-19 vaccine-specific opinions being generalized to other vaccines," says Leuchter. "People who feel compelled to oppose or support COVID-19 vaccines may feel that they should in turn oppose or support other vaccines."

Rates of full vaccination against COVID-19 (i.e., both doses of a two-dose vaccine or one dose of a single-dose [vaccine](#)) varied from 50% (Alabama) to 81% (Rhode Island) through January 2022. Flu vaccination rates through January of the 2021-2022 flu season were also highly variable, ranging from 31% (Mississippi) to 59% (Connecticut). The study authors found that 60% of the variation in a state's flu vaccination rate could be explained solely by that state's average COVID-19 vaccination rate. "This is compelling evidence that the vaccination behaviors for flu and COVID-19 vaccines are inextricably linked," said Leuchter.

The authors note that these findings apply only to the general adult population. Flu vaccination rates among children fell uniformly and precipitously across both the 2020-2021 and 2021-2022 flu seasons, regardless of when COVID-19 vaccines were introduced or state-wide rates of COVID-19 vaccination. The authors point out that previous

studies have reported similar dramatic national declines in rates of childhood vaccination against measles, mumps, and rubella (MMR). Leuchter says that while belief generalization in the negative direction may partially explain why parents are opting out of routine vaccines for their children, the fact that childhood flu vaccination declined even among states with high rates of COVID-19 vaccination suggests that belief generalization from COVID-19 vaccines does not fully account for this trend. Reassuringly, flu vaccination rates among adults over 65 years of age remained relatively stable during these two flu seasons compared to the 2019-2020 season, albeit persistently underutilized in this population.

This study had some limitations. For instance, it did not directly measure individuals' beliefs or reasons for forgoing vaccination. As an observational study, it does not prove that lack of trust of the vaccines or government caused the new decline in flu vaccination rates. In addition, the CDC reports flu vaccination rates based on self-report surveys and has not made county-level data for the 2021-2022 flu season available, so only state-wide data were used.

Despite these limitations, the researchers state that these findings should raise alarm and prompt rigorous study of the causes of decreases in non-COVID-19 vaccination rates to inform urgent action and corrective policies.

More information: Association between Covid-19 Vaccination and Influenza Vaccination Rates, *New England Journal of Medicine* (2022). [DOI: 10.1056/NEJMc2204560](https://doi.org/10.1056/NEJMc2204560)

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