

Vaccination and hospitalization rates

The delta variant of the coronavirus is putting a lot of Americans in hospitals, but its impact varies. The virus is hitting Southern states hard. For each 100,000 residents, COVID-19 has put the following number of people in hospitals: 64 in Florida; 50

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in Louisiana; and 41 in Arkansas. These are the first, second, and fifth highest COVID-19 hospitalization rates in the country. The virus is doing less harm in the Northeast. For each 100,000 residents, COVID-19

has sent two people in Vermont to hospitals and it has sent four people there in Massachusetts.

Many people assume that vaccinations explain a good deal of these differences, and anecdotal evidence can support this claim. Vermont has the highest vaccination rate in the country (68 percent) and the lowest COVID-19 hospitalization rate. Massachusetts, the other "safe state" that I mentioned has a high vaccination rate (at 64%). Further, states with low vaccination rates typically have high hospitalization

rates. For instance, Arkansas and Louisiana, states with crowded hospitals, only have COVID-19 vaccination rates of 38 percent. While these states do not have the lowest vaccination rates in the country, they aren't far from Alabama, which does at 34%.

We should all be careful of putting too much weight on the experience of just a few cases. While the data I presented sounds convincing, I could be presenting numbers from the states that make my case, while ignoring data from states that contradict the story I want to tell. For instance, you will notice that I did not mention Florida's vaccination rate. This might seem to be a strange omission and even raise a question about whether I was being bias in selecting which vaccination rates to present. Indeed, Florida does contradict my previous story. 50 percent of its people have received the COVID-19 vaccine, which is an average vaccination rate among states; yet, as we already mentioned, Florida has the highest COVID-19 hospitalization rate.

To avoid the charge that anecdotal evidence can be easily manipulated, it would be better

for someone to present more than just anecdotal data. For instance, they could mention a correlation coefficient. A correlation coefficient is a measure of how closely two variables move with each other. If the correlation is 1, then increases in one variable always accompany increases in the other variable. A correlation of 0 suggests that there is no relationship between the variables and they move independently of one another. A correlation of -1, suggests the two variables always move in opposite directions. When one goes up, the other goes down, and vice versa.

The correlation between vaccination rates and COVID-19 hospitalizations is -.61. This means that when the vaccination rates go up, the hospitalization rates drop. In dealing with human decisions, we will never see a correlation of 1 or -1. The -.61 correlation suggests a strong negative relationship between these two variables. The take away is that getting shots works. The relationship is not dependent on strategically selecting which states to discuss. When all of the states are considered together, the relationship is still there: shots keep people out of hospitals.