**Table 1.** Regression output from model testing the parallel assumption

|  |  |
| --- | --- |
|  | Lung hospitalization |
| Year | 46\*\*\* |
|  | (16) |
| Vaping ban | -14,856 |
|  | (48,672) |
| Year\*Vaping ban | 6.2 |
|  | (24) |
| Constant | 22,671 |
|  | (33,011) |
| Observations | 550 |
| *R*2 | 0.654 |

Standard errors in parentheses. Vaping ban (whether the state implemented the ban in 2021, 0 = No, 1 = Yes). Data from years prior to 2021 were included.

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table 1 shows results from the linear regression model that tests for parallel trends between the treated and untreated groups prior to the treatment. Here, we see that the group that implemented the ban in 2021 did not differ significantly from each other in their number of lung-related hospitalization cases prior to the ban (as shown by the insignificant coefficient for vaping ban). In addition, treatment did not interact with year (indicated by the insignificant coefficient for the interaction Year\*Vaping ban). This suggests that the trend, which is the variation by year, did not differ significantly across the states that implemented and did not implement bans in 2021. Given this, the parallel trend is relatively well satisfied.

**Table 2.** Regression output from model testing diff-in-diff. State fixed effects were included but omitted here.

|  |  |
| --- | --- |
|  | Lung hospitalization |
| Post-treatment | 518\*\*\* |
|  | (66) |
| Vaping ban\*Post-treatment | -3,682\*\*\* |
|  | (97) |
| Vaping ban | -5,259\*\*\* |
|  | (244) |
| Observations | 1050 |
| *R*2 | 0.918 |

Standard errors in parentheses. Vaping ban (whether the state implemented the ban in 2021, 0 = No, 1 = Yes), Post-treatment (0 = years prior to 2021, 1 = 2021 and onwards)

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table 2 contains the output from the model testing whether the difference between the states that implemented and did not implement vaping ban is significant after the ban (state fixed effects were controlled for but not displayed here). The main effect of vaping ban (treatment) is significant and negative. This suggests that overall, the states that banned vaping has on average, 5,259 lung-related hospitalization cases ceteris paribus. Moreover, the interaction between treatment and time period (prior or post treatment) is negative, suggesting that the difference is much greater after the ban has been implemented. Taken together, the model suggests that implementing vaping bans do seem to decrease the number of lung-related hospitalizations overall.

Chart, line chart

Description automatically generated

**Figure 1.** Diff-in-diff line graph for average number of hospitalizations across years for both groups that did or did not implement a vaping ban in 2021. The vertical linear signifies the year 2021 when the ban was implemented for states that banned vaping

This figure corroborates findings from both models by showing 1) the trend is relatively similar prior to the ban was implemented (Year 2021) and 2) the mean hospitalization number dropped significantly for the treatment group after the ban was implemented.