

COVID-19 Mitigations in the U.S.

April 16 - 30, 2021





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This report provides highlights of a weekly survey of practices regarding the mitigation of the spread of COVID-19 in the U.S. during the last half of April 2021 along with comparisons to prior half-month time periods. The survey asks about the degree to which the respondents perceive that people in their community are following 21 common mitigation practices. The responses are separated by state and compared to state level statistics regarding the level of COVID-19 infections from the Johns Hopkins COVID database for the same time period.

Executive Summary

After a dip in mitigation compliance in the first half of April, an increase was observed in community mitigation compliance across the country in the last half of the month. In the first half of April average compliance was 60.8% compared to 62.3% in the last half of March, according to observations from 732 individuals from 50 states and the District of Columbia. At the same time, new COVID-19 infections fell by 18% at 0.85 million new cases. The average infection level for the half month was 278 per 100,000 vs. 280 per 100,000 for the prior period.

Additional findings from the first half of April:

- ❖ Compliance rose slightly for all twenty-one mitigation practices.
- ❖ Of the twenty-one states where we have significant data from this week, the best three (Maryland, California, and Minnesota) had average compliance of 69%.
- ❖ All states among the twenty-one had average mitigation compliance over 55%. Three states were under 60% - North Carolina, Tennessee and Florida. Florida, North Carolina and Ohio were the three states among the ten most populous to have a decrease in compliance.
- ❖ Michigan, which has experienced very high increases in infection level over the past 4 weeks reported compliance of “Quarantine people who have been in close contact with people with positive tests” that was 13% below the national average.

The full set of mitigations surveyed are included in the appendix to this report.

It is now estimated that immunities from vaccination total 39% of the population, while immunities from people who have been infected and recovered are 9%. The race between the vaccine impact, new strains of COVID and reduced compliance to determine the near-term course of the pandemic and the contestants is head to head for now.

Mitigation Practices - National

Average percentage compliance with 21 COVID-19 mitigation strategies that are surveyed was 62.3% in the second half of April, up from 60.8% in the first half¹. For the half-month, only one of the twenty-one mitigations practices had average compliance above 75%, three had average compliance below 50% and seventeen had average compliance between 50% and 75%. This is a slight improvement from the last two half months.

Nationally the weighted average of compliance with these mitigations has averaged 62.5% in the first four months of 2021. The average for the last four months of 2020 was 64%. When mitigations are broken out into practices within states and regions of states, there is a far greater variance in mitigations. These differences are driven by the respondents observing and experiencing the results within individual states of implementing changes in COVID mitigations in terms of infection levels. Individuals then will react to their personal perceptions of the level of COVID danger and increase or decrease their compliance.

Survey Details

Collects information from volunteers on perceptions of community compliance with 21 COVID Mitigation strategies.

Participants answer between 0% and 100% that they see the strategy in use in their area.

Participants are asked to fill out survey every week.

CHANGING MITIGATIONS

Throughout the past eight weeks, the six mitigations that our observers say have the highest average compliance have remained the same (with “Restaurants to have reduced seating” currently out of the Top 5). Results from the last four periods are presented below:

Top Five Mitigations	Mar 1 - 15	Mar 16 - 31	Apr 1-15	Apr 16-30
Special protection in hospitals areas that treat COVID patients	79%	79%	76%	77%
Hairdresser and barber to be open with restrictions	71%	74%	69%	71%
Wearing a mask in public	71%	70%	69%	71%
Quarantine people with positive tests	69%	70%	68%	70%
Visitors to senior living facilities to be restricted	75%	71%	67%	69%

Mask Wearing and Quarantining people with positive tests both continued within the same tight range for the four periods. Restrictions on visitors to senior facilities has ceased falling but is still down 16% from late February. And special protection in hospitals may be down due to lower hospitalizations in some areas. The top mitigants have had an average compliance of 72% for this period, down 4% from late February.

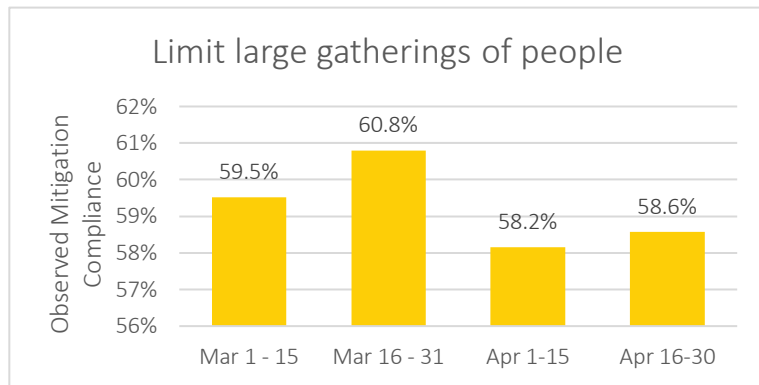
¹ Mitigation compliance values for early April and all of March referenced here differ from prior reports due to additional data cleansing that was performed for this report. The resulting national mitigation compliance values follow the same path of increases and decreases as previously reported.

Mitigation practices with the largest change are compared below.

Mitigations with Largest Change	Apr 1-15	Apr 16-30	Change
Violations of COVID restrictions result in fines or police enforcement	40%	44%	4%
Colleges are closed or holding only remote classes	53%	57%	4%
Wearing a mask in public	69%	71%	3%
Businesses to be closed – work from home only	48%	51%	2%
Get tested for active virus	59%	61%	2%

All of the twenty-one mitigations that are monitored reported increases in compliance in late April compared to early April, only the top four above changed by 2% or more. These uniformly positive changes are evidence that the widespread relaxation of restrictions is largely being ignored and voluntary compliance is taking over from government mandated compliance.

Compliance with Limiting Large Gatherings had been irregular throughout March and April. Compliance in April is lower than March, but it still stands at 58.6% which means that the number of communities limiting large gatherings is higher than those who are not.



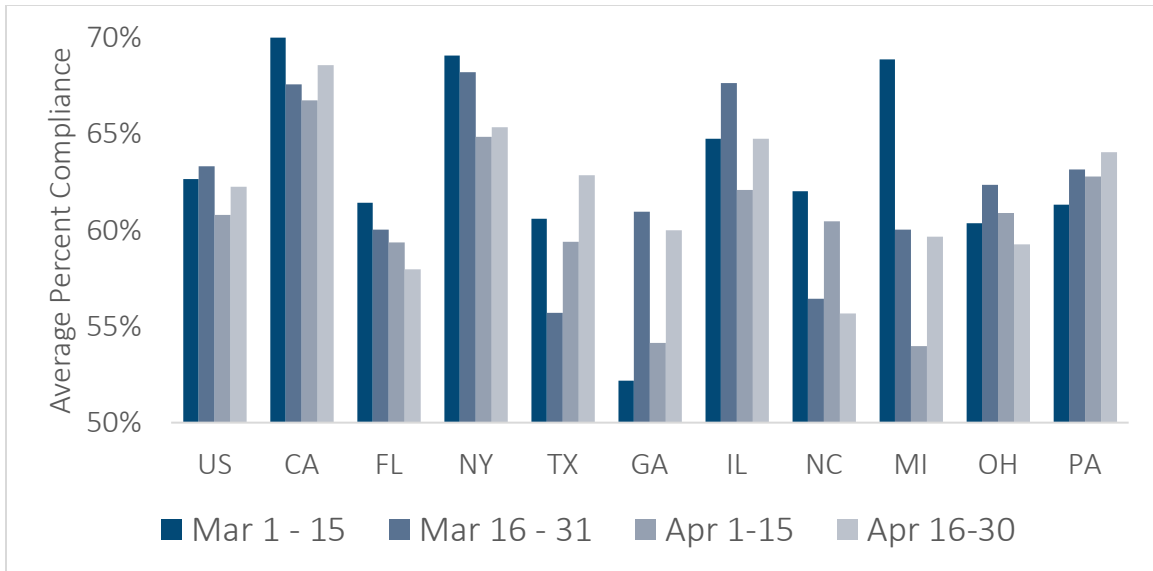
Mitigation Practices – State Level

Weighting Basis

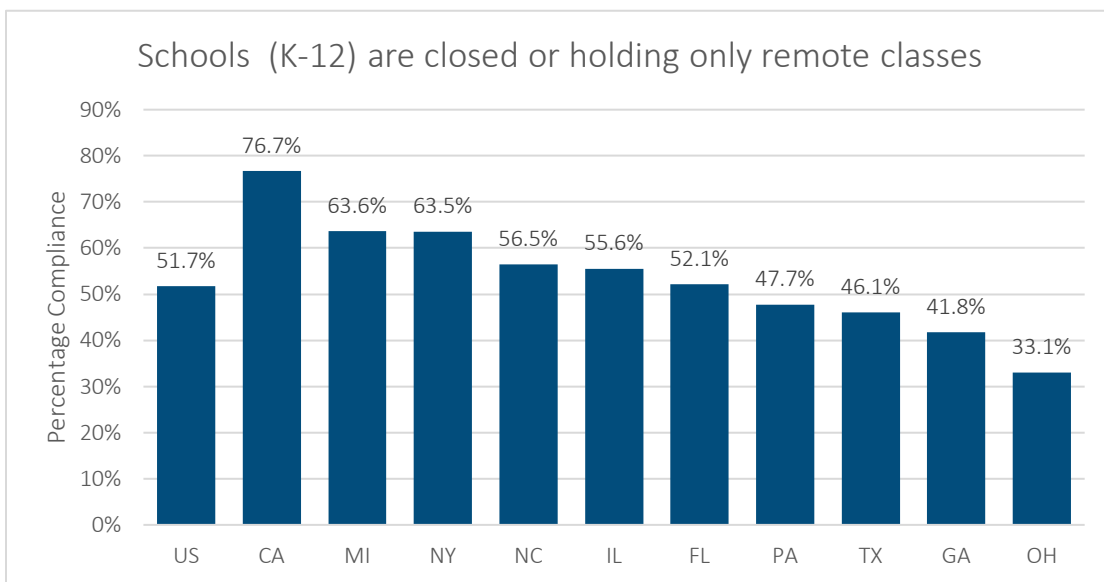
Weighting is based on average compliance in states where COVID was under control during September.

For the first half of April, the survey had a credible number of responses from 21 states. The states from that group with the highest compliance were Maryland (69%), California (69%), and Minnesota (67%). The states with the lowest compliance were North Carolina (56%), Tennessee (57%) and Florida (58%). Interesting to note that all 21 states have average compliance above 55%.

Focusing in on the ten most populous states, (which are all among the 23 states with credible number of responses) there is quite a bit of variability of compliance over the past four months.



Of these ten states, only Florida and Pennsylvania are exhibiting a consistent trend. Looking at the 21 mitigations separately (below), treatment of schools (k-12) shows the largest variability of compliance percentage across these ten states.

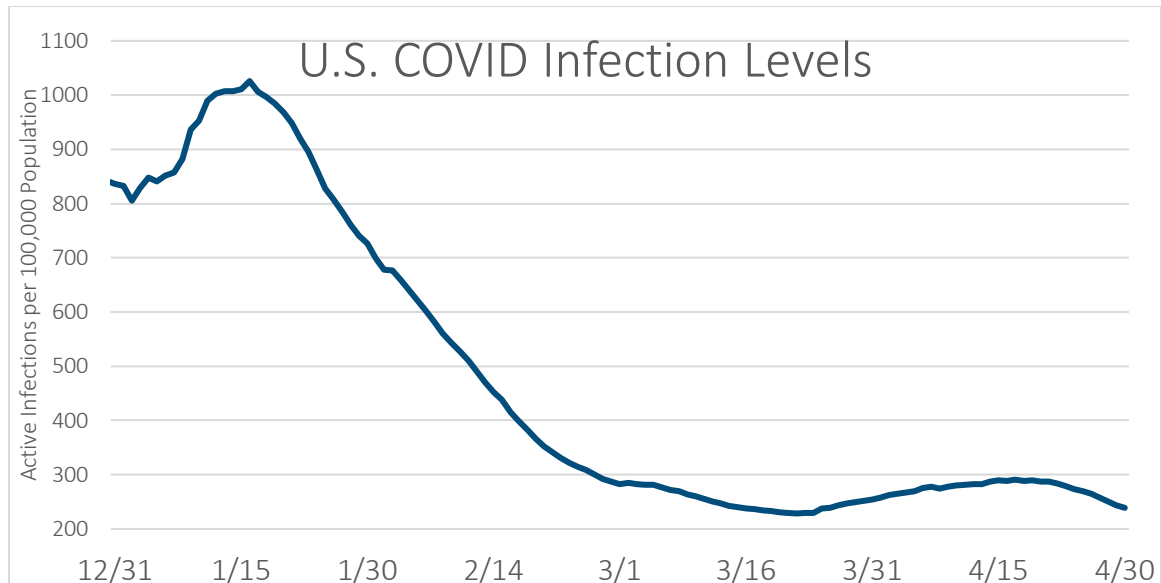


Variability of Changes in Mitigation Compliance by State

Mitigations with the Largest Change (early April to late April)	Change In U.S. Average	Number of States with Increases	Number of States with Decreases	Largest Increase	Largest Decrease
Violations of COVID restrictions result in fines or police enforcement	+4%	15	6	34%	-23%
Colleges are closed or holding only remote classes	+4%	15	6	38%	-15%
Wearing a mask in public	+3%	14	7	14%	-8%
Businesses to be closed – work from home only	+2%	14	6	36%	-22%
Get tested for active virus	+2%	13	8	18%	-9%

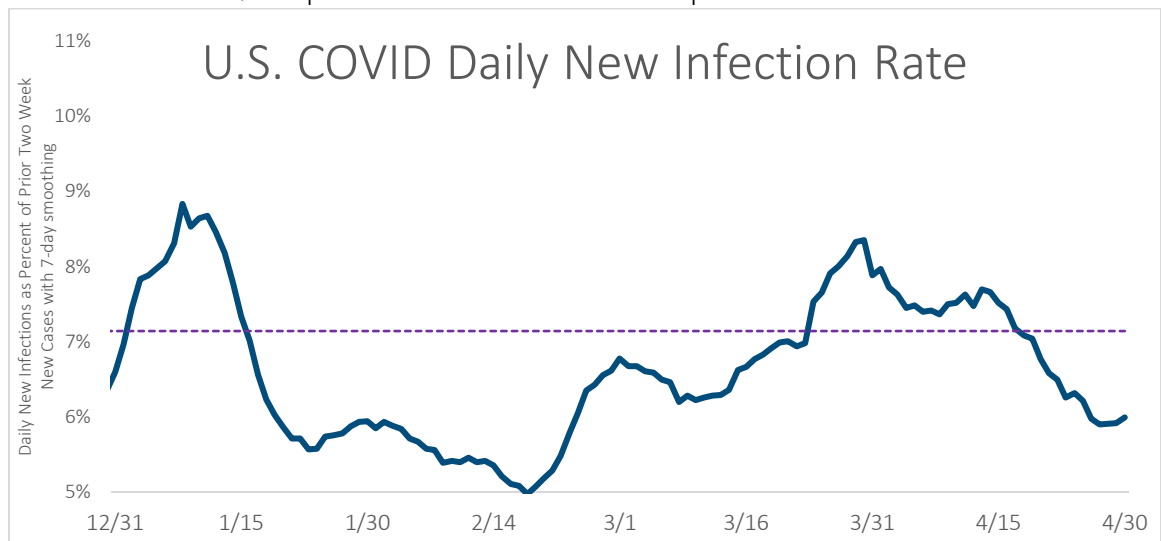
In general, the table above shows that changes in the national averages are driven by the balance of states that are either increasing or decreasing their compliance. This table reflects only the 21 states where we have credible observations. The national average includes the responses from the other 29 states which make up less than 20% of total observations.

COVID-19 Spread of Infections – National

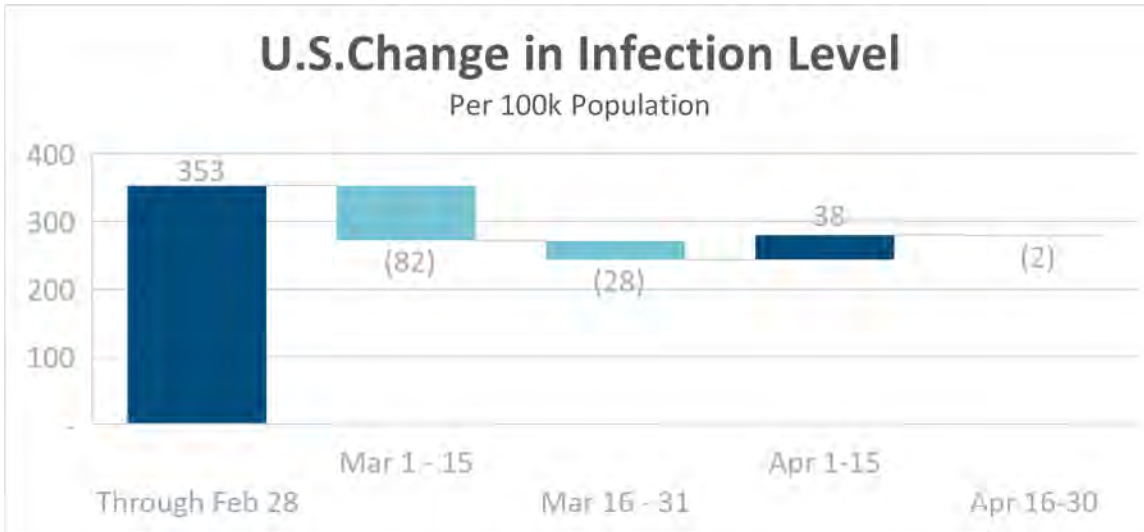


There were about 850,000 new cases of COVID-19 reported in the second half of April. This is down from 1,033,000 reported in the first half of April and down substantially from the 2.6 million reported in the late January. The reported infection level is now in the same range as experienced in the month of October. Vaccinations are having a favorable effect – these values reflect an 18% drop in new cases in the month of April.

Infection Level
is the number of active infections per 100,000



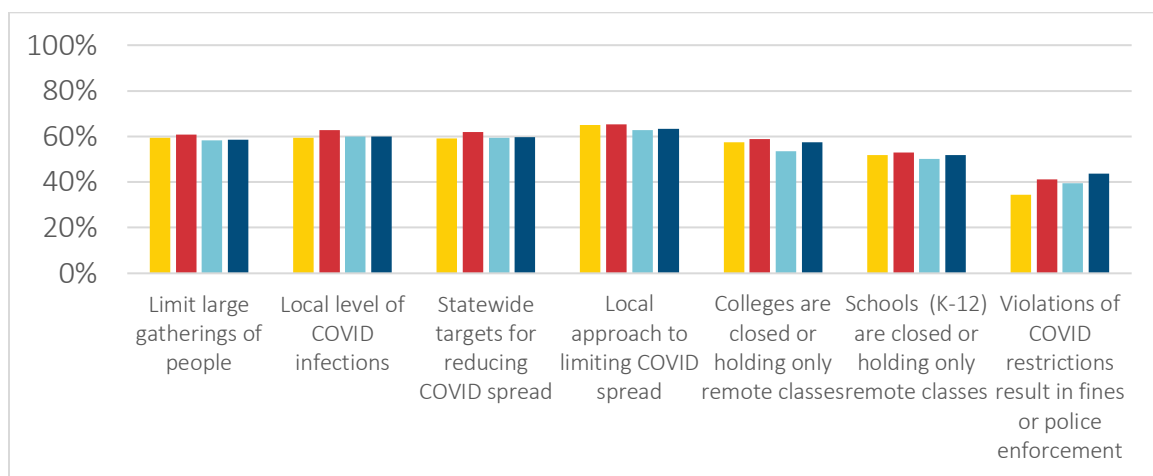
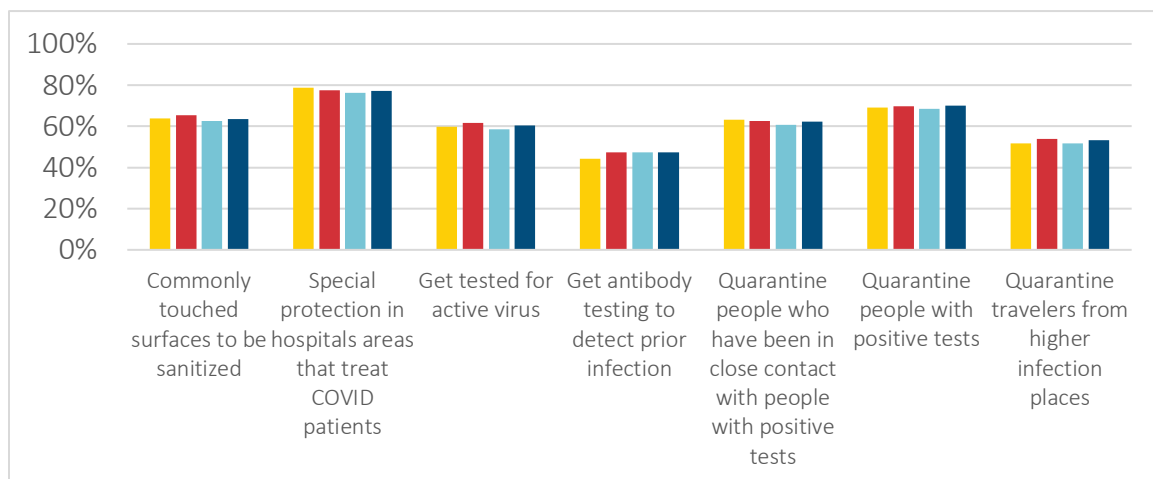
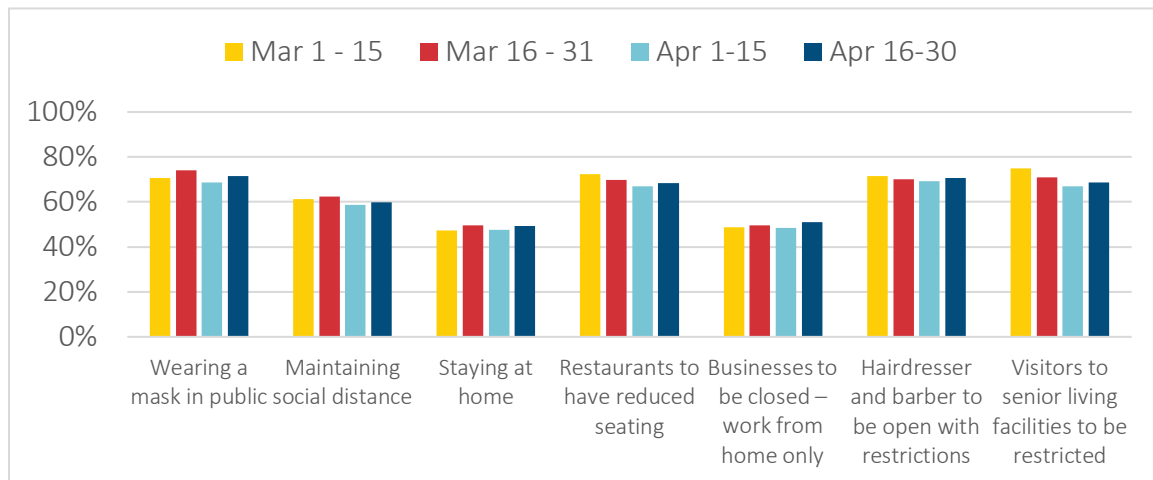
The rate of new infections flattened in the past two weeks at a level well below the No Growth level of 7.14%. This means a continuation of slow but steady daily decrease in the number of new infections. The New Infection rate is being pulled upwards by the new, more infectious strains of COVID, downwards by the vaccinations and downwards by the average increasing mitigation compliance noted above.



The plot above clearly shows the Infection Level stabilizing with a near zero change in the three most recent periods.

Mitigations Levels over Time

The following charts provide a perspective on the relative compliance levels of all 21 mitigations with each other as well as the trends over the past two months.



Impact of Immunities

The vaccination programs are moving forward very rapidly. An estimate of the potential impact of immunity gained from vaccinations and from recoveries from COVID infections shows that at this time, the impact of immunities on the spread of COVID has reached a significant level.

	4/15/21	4/30/21	Increase
Reported Recovered Immune	30.0 M	30.9 M	+0.9 M
Vaccinated Immune	111.6 M	125.2 M	+13.6 M
Total Immune	141.6 M	156.1 M	+14.5 M
Pct of Population	43.4%	47.9%	+6.5%
Est. Impact on NIR	-5.5%	-5.5%	-

The number of new vaccinated immune people is less than half of the number in the first half of April, consistent with reports of widespread vaccine avoidance. Approval is nearing for vaccines for teenagers which should lead to another large wave of vaccinations when that occurs.

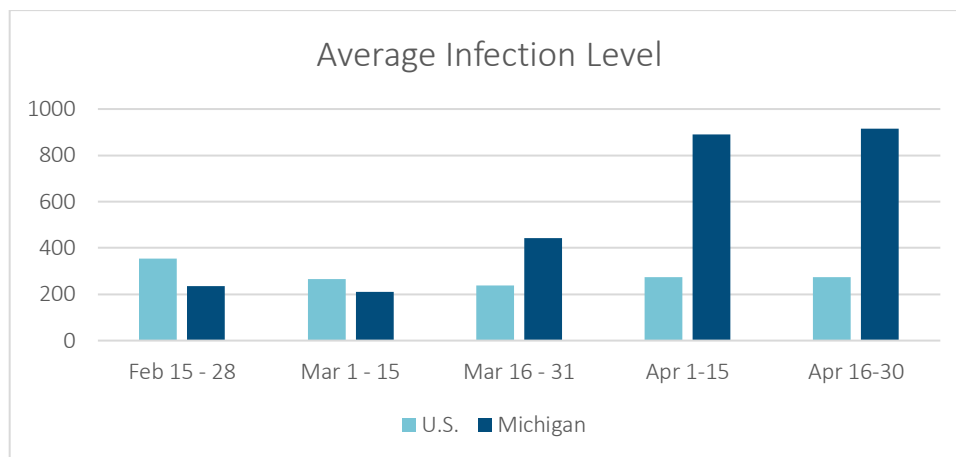
While the national average total percent immune is shown above to be 47.9%, at the state level, immune percentage ranges from a high of 67% in Michigan to a low of 37% in Mississippi. These differences are primarily driven by the different levels of both recovered immune people in the states and vaccinated immune.

These calculations are estimates based upon average reported efficacy of the vaccines and an assumption that people with immunity would face an average level of exposure to COVID infection. No adjustments were made to these figures to reflect the exact timing of the onset of immunity from vaccinations which varies by type of vaccine or the fact that some recovered immune people are getting vaccinated.

In addition, these calculations are based upon Reported Infections. Because COVID infections result in a very wide range of individual responses from largely symptom free to severe respiratory distress leading to hospitalization and death, there are thought to be many cases that go unreported. The CDC conducted a study of the seroprevalence of COVID antibodies in blood drawn for a variety of medical tests. Results from that study, updated in late February show that unreported infections may be as high as 100% of the reported infections. If that were true, the estimated Total Immune level could be as high as 50% of the U.S. population reflecting both the unreported immune people and that approximately 40% of the recovered immune people may be already in the vaccinated immune figures.

Surge in Michigan

Over the past two months, Michigan infection level has soared as the U.S. in total has experienced much smaller decreases and increases.



In the last half of April, mitigation compliance is lower than the National average in Michigan for 12 practices and the same or higher for 9. Focusing in on specific mitigation practices, the following are the practices where compliance differs the most from the national averages over the two-week period:

Compliance in Michigan is less than the U.S. Average	Difference	Compliance in Michigan is more than the U.S. Average	Difference
Quarantine people who have been in close contact with people with positive tests	-13%	Colleges are closed or holding only remote classes	9%
Get tested for active virus	-11%	Local approach to limiting COVID spread known	4%
Limit large gatherings of people	-10%	Violations of COVID restrictions result in fines or police enforcement	4%
Quarantine people with positive tests	-8%	Wearing a mask in public	2%
Get antibody testing to detect prior infection	-7%	Staying at home	1%

There are other factors, including the prevalence of more transmissible variants and weather, involved in the level of transmission of COVID in Michigan, but the above list does reveal some practices where Michigan could consider strengthening. In particular, the practice with the largest deficit compared to the national average, Quarantine people who have been in close contact with people with positive tests, was also found to be a practice that had a high negative correlation (-58%) with infection level².

² COVID-19 Mitigations in the U.S. September 2020 – February 2021, <https://www.soa.org/resources/research-reports/2020/covid-19-mitigation/>

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Note on Mitigation Compliance Observations

The COVID mitigation information is collected via Pollfish and SurveyMonkey surveys. In those survey, observers are asked to say what they are seeing in their community regarding the percentage compliance with 21 specific mitigation activities. The observers are volunteers who were either recruited personally by the project team or who responded to a variety of solicitations for observers via Twitter, Facebook, LinkedIn, Pollfish and SurveyMonkey. This data is subject to self-selection and other biases. No adjustments have been made to the data that we have collected in order to respond to possible biases. Observations are aggregated and the average of multiple views are treated as true information about the mitigation activity in a state. The variance of the responses in a state has been examined and targets are set for a higher number of responses in states where there is a higher variance of responses.

Appendix List of Mitigations under Study

- Wearing a mask in public
- Maintaining social distance
- Staying at home
- Restaurants to have reduced seating
- Businesses to be closed – work from home only
- Hairdresser and barber to be open with restrictions
- Visitors to senior living facilities to be restricted
- Commonly touched surfaces to be sanitized
- Special protection in hospitals areas that treat COVID patients
- Get tested for active virus
- Get antibody testing to detect prior infection
- Quarantine people who have been in close contact with people with positive tests
- Quarantine people with positive tests
- Quarantine travelers from higher infection places
- Limit large gatherings of people
- Local level of COVID infections
- Statewide targets for reducing COVID spread
- Local approach to limiting COVID spread
- Colleges are closed or holding only remote classes
- Schools (K-12) are closed or holding only remote classes
- Violations of COVID restrictions result in fines or police enforcement

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