



COVID-19 Mitigations in the U.S. November 28, 2020



November 2020



COVID-19 Mitigations in the U.S.

Week ending November 28, 2020

AUTHORS David Ingram, CERA, FSA, MAAA Daniel Ingram, MBA

Caveat and Disclaimer

The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of the Society of Actuaries or its members. The Society of Actuaries makes no representation or warranty to the accuracy of the information.

Copyright © 2020 by the Society of Actuaries. All rights reserved.

COVID-19 Mitigations in the U.S. Week ending November 28, 2020

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 week ending November 28, 2020. 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

A slight increase occurred in community mitigation practices across the country this week from 61.8% last week to 62.9% this week according to observations from 406 individuals in 45 states. At the same time, new COVID-19 infections set a record for the third week in a row, surpassing 1.1 million cases in a week again. Since a recent low of 158 infections per 100,000 people in mid-September, infections have risen to 721 infections per 100,000 people and continue to climb.

Additional findings from the week ending November 20:

- The top mitigations practices stayed at the lower level that was reported last week.
- Of the nineteen states where we have significant data from this week, no two states have had the same approach to controlling COVID.
- A closeup look at four mitigations where the weekly change differed from the monthly trend by more than 5% revealed that Massachusetts (-12%) and Georgia (-13%) have greatly reduced their mitigations on average over the last five weeks.
- The two largest changes in mitigations this week came in increases to K-12 school closures and college closures. It is difficult to tell what portion of these closures are reactions to the spread of COVID and which reflect long-planned adaptations to the holiday schedule at the end of the year.

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

Attendance at Thanksgiving last year (15.2 people) and expected attendance this year (8.6 people) was reported in surveys over the last two weeks. These responses showed that many people people did not plan on changing their Thanksgiving attendance this year compared to last (33% of people), and nearly the same amount planned on reducing their attendance by 80%-100% (29% of people). A slight majority planned on reducing their gatherings (53% of people), with only a small minority planning on increasing the size (15% of people).

Use of mitigations and the spread of COVID continue to demonstrate a reflexive relationship. As the virus spreads, mitigations are put in place and then withdrawn once the virus is more under control. Currently the U.S. is in the midst of the largest increase in spread of the pandemic yet and it is yet to be seen how this will change the efficacy of the various mitigations. Correlations can be identified between individual mitigations and the rate of infections but have yet to be able to identify a concise leading indicator with sufficient explanatory power to predict the course of the virus.

Mitigation Practices - National

Average percentage compliance with 21 COVID-19 mitigation strategies that are surveyed was 62.9% this week, up slightly from 61.8% last week. Five of the twenty-one mitigations practices had average compliance above 70%, one had average compliance below 40% and fifteen had average compliance between 40% and 70%. This is a small change from last week with one practice each moving out of the high and low ranges into the middle range.

Nationally the weighted average of compliance with these mitigations has remained steady since the beginning of August, averaging 64.0% with a standard deviation of 3.26%. When mitigations are broken out into practices within states and regions of states, there is a far greater variance in mitigations as respondents observe the results of individual states implementing changes in COVID mitigations to combat surges and relax those measures as the situation improves. Individuals are reacting to their personal perceptions of the level of COVID danger locally. Many instances have been observed of cyclical COVID caseloads and mitigation practices within individual states even as the U.S. average remains steady.

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.

CHANGING MITIGATIONS

Throughout the past eight weeks, the five mitigations that our observers say have the highest average compliance have remained the same. Results from the last four weeks are presented below:

Top Five Mitigations	11/7/2020	11/14/2020	11/21/2020	11/28/2020
Special protection in hospitals areas that treat COVID patients	91%	93%	81%	80%
Restaurants to have reduced seating	87%	86%	77%	79%
Visitors to senior living facilities to be restricted	88%	85%	75%	75%
Hairdresser and barber to be open with restrictions	87%	85%	71%	74%
Quarantine people with positive tests	79%	81%	71%	71%

This week saw a continuation of last week's sharp decline in all five practices nationwide. The top mitigants have had an average compliance of 75% for the last two weeks compared to 86% for the preceding two. With the recent surge in COVID cases across the country, it is concerning that the most used mitigations have fallen drastically. Other mitigations have increased modestly, which is why the overall average has remained steady over time. Mitigation practices with the largest increase are compared below:

Mitigations with Largest Increase	11/21/20	11/28/20	Increase
Schools (K-12) are closed or holding only remote classes	54%	60%	7%
Colleges are closed or holding only remote classes	57%	63%	6%
Violations of restrictions result in fines or police enforcement	28%	33%	4%
Get antibody testing to detect prior infection	37%	40%	4%
Hairdresser and barber to be open with restrictions	71%	74%	3%

It is difficult to tell if the increases in K-12 school closures and college closures are the result of longplanned changes in school schedules as the year are draws to an end or a response to recent surges in COVID. It is possible that the increase includes some of both. The enforcement of violations has long been the lowest mitigation method used across the 21 strategies. There are many possible explanations for this, such as a low threshold for effectiveness of enforcement and reluctance on the part of politicians to create stringent enforcement mechanisms. If the increase this week is followed by another one next week, this will show a sizeable change in enforcement, as this mitigation has averaged 27% over the last 12 weeks with a standard deviation of 3.7%.

With the large increase in number of infections we are currently experiencing, it is also possible that mitigations are less effective when used at the same level than they were at lower infection levels. This may indicate that nationwide we need to adapt our behaviors on a large scale from the routinized mitigations that were in effect for much of the summer and into the fall.

Mitigation Practices – State Level

Weighting Basis

Weighting is based on average compliance in states where COVID was under control during September. This week, the survey had a credible number of responses from 19 states. In those states the weighted average mitigation was 60.5% with a standard deviation of 6.6%. The states with the highest compliance were Washington (70.0%), Minnesota (69.0%), and New York (67.6%). The states with the lowest compliance were Georgia (44.9%), Arizona (50.0%), and Texas (54.0%). Georgia

reported a large decrease in compliance, from 55.0% last week, including decrease of

greater than 10% in 9 mitigants.

When comparing average changes this week compared to the last month, there are interesting differences in the trend compared to the recent events. For four mitigations the weekly change is the opposite of the trend over the last five weeks by more than 5% (yellow outline in chart at right).

Taking each of those four mitigants in turn, increases in hairdresser and barbershop restrictions this week were led by Kentucky (+19%), Illinois (+14%), Washington (+14%), and Arizona (+12%). Since October 24th, the declines were led by Massachusetts (-31%), Georgia (-26%), and Indiana (-19%).

This week's increases in restaurants reduced services were led by Texas (+11%), Indiana (+10%), and California (+10%). The declines since October 24th were led by Georgia (-23%), Massachusetts (-13%), and Ohio (-12%).

The weekly change in limiting large gatherings were modest overall. However, the largest increasing states were Colorado (+11%) and

Mitigation Change in past week and since Oct. 24



Pennsylvania (+8%). The declines since October 24th were led by Massachusetts (-20%), Washington (-17%), and Arizona (-11%).

Similarly, Restrictions at Senior Living Facilities remained flat over the last week. The largest increases were seen in Indiana (+23%), New Jersey (+13%), and California (+11%). Since October 24th, the decline is led by Georgia (-35%), Massachusetts (-27%), Texas (-19%), and Virginia (-16%).

Taken together, these four mitigations show how much any given state can alter the national average. In Georgia (-13%) and Massachusetts (-12%), mitigations have decreased the most on average of any states since October 24th. Only two mitigations increased in Massachusetts during that time, Colleges Closed or Remote Only (+4%) and Contact Tracing (+1%), both small enough to fall well within the margin of error. In Georgia three mitigations rose during that time, Sanitizing Surfaces (+5%), Communication of Statewide Targets for COVID Reduction (+8%), and Enforcement of Violations of COVID Regulations (+4%).

The large movements in compliance over the last month demonstrated in these four mitigations show that even though the national picture has been static, individual states are constantly changing their practices to adapt to what individuals, corporate leaders, and political authorities are observing on the ground.

COVID-19 Spread of Infections – National

There were over 2.3 million new cases of COVID-19 reported in the past 14 days. The last two weeks have been the worst two weeks of the pandemic by far in the United States. As recently as November 5th, the 7-day total was at half the current level. The hitch seen in the most recent week likely reflects the changes in reporting due to Thanksgiving and should smooth out as numbers are reported in the coming week.

Infection Level

is the number of active infections per 100,000 people.



In good news this week, the rate of infections fell precipitously. As the chart below shows, the rate had risen throughout November before the steep decline in the last two weeks. If the rate of new infections stays below 7.14%, the "No Growth Line," for an extended period of time, we should see the number of infections decrease. With the infection level so high, it may take months of maintaining the new infection rate at around 7% to get back to where the country was at the beginning of the fall. If the country were

able to reduce the new infection rate well below the no growth line, we would see the infection level fall far more rapidly.



Thanksgiving – Changes in How People are Celebrating this Year

Over the last two weeks the survey asked participants how many people they planned on dining with on Thanksgiving this year and how many they had dined with last year. On average, there was a decrease in expected attendance of 6.7 people. Nationwide people reported dining with 15.2 people on average last year and expected to spend the holiday with 8.6 this year.

Compared to last year, the results were bifurcated between people who are not changing their thanksgiving plans (33%) and those who will reduce participants by 80-100% (29%). A small minority (15%) of people plan on increasing their gathering this year while more than half (53%) plan on decreasing the size of the gathering.

Though this year urban residents expect to have larger thanksgiving gatherings (11.8) compared to suburban (9.6) or rural (7.8) residents, there was not much difference in the expected change in attendance between the three.



There is only a small correlation between weighted mitigation levels and the change in Thanksgiving attendance (0.19). Among individual practices, there was also little correlation to the change in thanksgiving attendance. The two largest positive correlations came between Special Restrictions in Hospitals (0.30) and Restrictions at Hairdressers and Barbers (0.25), while the largest negative correlations were with Antibody Testing (-0.26). The lack of any strong connection between the mitigations overall and



individual mitigations suggests that there are different forces at play in how people protect themselves from COVID normally and how they treated the Thanksgiving holiday.

Acknowledgments

The researchers' gratitude goes to those without whose efforts this project could not have come to fruition: the Project Oversight Group and others for their diligent work overseeing questionnaire development, analyzing and discussing respondent answers, and reviewing and editing this report for accuracy and relevance.

Project Working Group members:

Max Rudolph, FSA, CFA, CERA Kailan Shang, FSA, CFA, PRM, SCJP Robert Wolf, FCAS, CERA John Stark, FSA, CERA Thomas McAndrew, Ph.D.

At the Society of Actuaries:

R. Dale Hall, FSA, MAAA, CFA, CERA

Note on Mitigation Compliance Observations

The COVID mitigation information is collected via a SurveyMonkey survey. In that 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, 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. Responses 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

About The Society of Actuaries

With roots dating back to 1889, the <u>Society of Actuaries</u> (SOA) is the world's largest actuarial professional organization with more than 31,000 members. Through research and education, the SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal challenges. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

Objectivity: The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

Quality: The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and nonactuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

Relevance: The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

Quantification: The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

Society of Actuaries 475 N. Martingale Road, Suite 600 Schaumburg, Illinois 60173 www.SOA.org