

Most of America Not Ready for Resurgent Covid-19 Outbreaks

Burden Falls to Business Leaders to Prepare

Key Judgments

The decision-making environment for US business leaders navigating the Covid-19 pandemic has grown especially complex over the past two weeks, due in part to mixed messages from government officials and health experts, and a lack of objectivity in interpreting emerging data on rising pandemic risk. This will increase the risk of dangerous and costly mistakes as companies reopen and attempt to maintain normal operations.

- C-Suites must not rely solely on government guidance that may be ill-suited to their specific situations.
- **Leaders must be prepared to collect and analyze intelligence relevant to their business objectives and operations, and create strategies customized to their risk tolerance, public perception, and corporate interests.**

The pandemic has entered a new phase in the United States, one in which different regions are experiencing vastly different and diverging rates of transmission, hospitalizations, and deaths. Although Covid-19 testing is now available widely across the country, and doctors and researchers are learning more each day about how to combat the virus, **the explosion of raw data about the pandemic does not by itself yield clear insights that enable decision-making.**

- Policymakers—reacting amid the fog of the pandemic—have issued myriad new guidance and directives, some of which lag far behind the rapid evolution of regional outbreaks, are driven more by local political considerations than science, and are contradictory across adjacent jurisdictions.

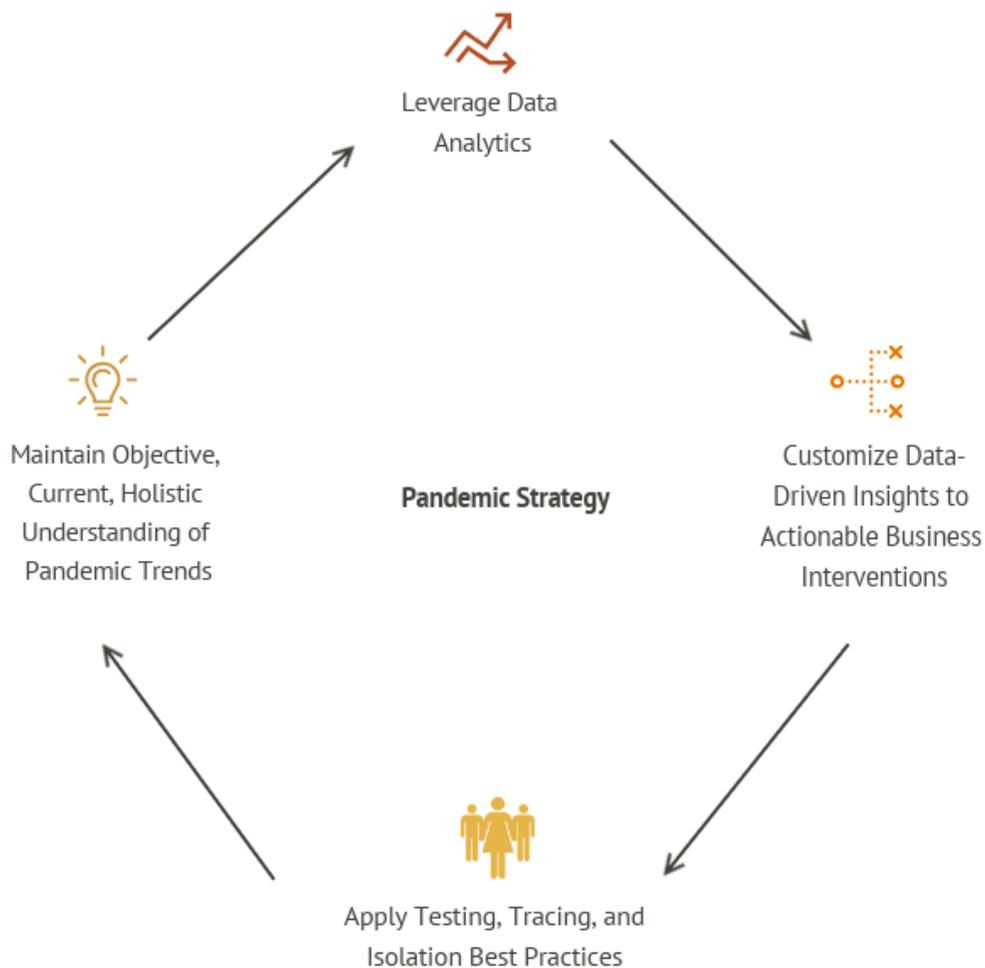
In this environment, **business leaders seeking to keep their workforces safe and operations running will bear a greater responsibility on several fronts**, including:

- **developing best practices** on testing, tracing, and isolation protocols for employees;
- **leveraging data analytics** to provide insights and early warning of new outbreaks;

Martin+Crumpton Group LLC makes no warranty (express or implied) as to the accuracy or completeness of any information provided or to information published by a third party referenced within its assessments. All information and material are believed to be correct. No liability is assumed for errors in substance or form of any of the materials provided. Martin+Crumpton Group LLC shall not be liable for any loss of profits or contracts or any direct, indirect, consequential, incidental, or special damages, business interruption, or death or personal injury arising out of or in connection with products or services provided under this agreement. This does not constitute medical or legal advice.

- marrying data-driven insights to **rational business interventions**; and
- maintaining an **objective, current, and holistic understanding** of the pandemic's trajectory to inform long-term business strategy.

An intelligence-driven framework, using data analytics married with a customized, operational decision matrix, can help business leaders make better, more informed decisions in this complex and rapidly changing environment.



MARTIN+CRUMPTON GROUP LLC

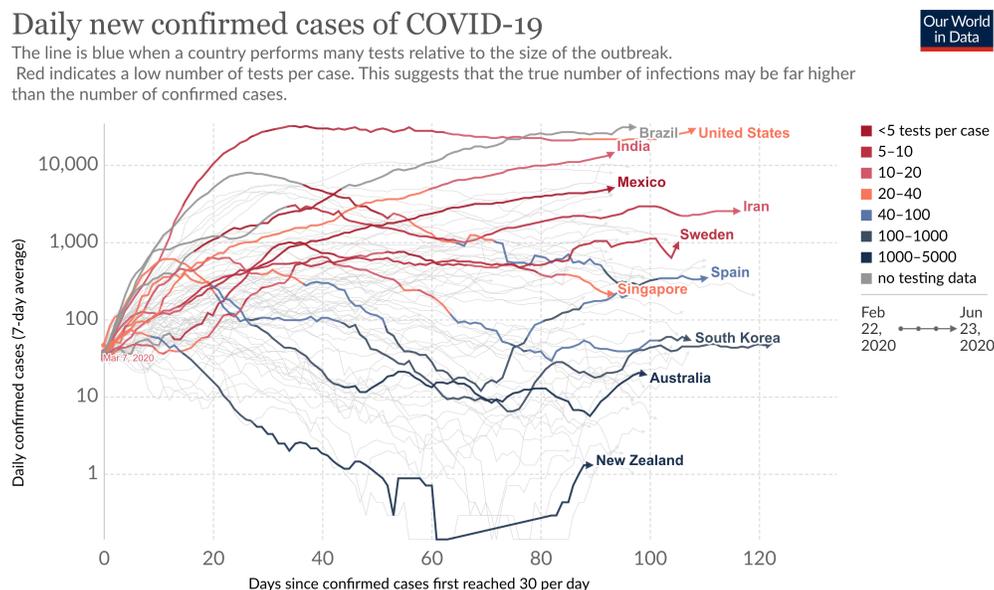
THE SITUATION

Pandemic Surges in Some States While Others Recover from Initial Wave

Compelling evidence is emerging of an increase in sustained community transmission rates across several major regions of the United States that had avoided an early outbreak, even as some early hotspots recover, judging from available data. **This increase has the potential to overwhelm hospital capacity in some areas and stifle the country's nascent economic recovery this summer, even before the autumn months, when seasonal conditions are likely to boost viral transmission.**

- Sustained community viral transmission is increasing at alarming rates in Arizona, Texas, Alabama, Florida, North Carolina, South Carolina, Tennessee, Arkansas, Nevada, Oklahoma, Louisiana, California, and Florida.
- Rising hospitalization rates in states experiencing rising new cases are real—they cannot be explained away by testing distortions. We expect death rates—a lagging indicator—to rise as well over the coming weeks, though the rate of increase could be slower compared to the initial wave of the pandemic.

As shown in the graph below, **while most advanced industrial countries in Europe and Asia managed to flatten, bend, and control the infection curve during the April-May period of economically-crippling lockdowns, the United States did not, and its infection curve now resembles that of hard-hit countries like Brazil, Russia, India, and Mexico.** This group of



Source: European CDC – Situation Update Worldwide – Last updated 23rd June, 11:20 (London time), Official data collated by Our World in Data
Note: Only countries for which testing data is available are included. Details about this data can be found at OurWorldInData.org/coronavirus-testing, OurWorldInData.org/coronavirus • CC BY

countries is still grappling with high and rising caseloads, insufficient testing for infection surveillance, and spotty contact tracing efforts to cut the chain of transmission.

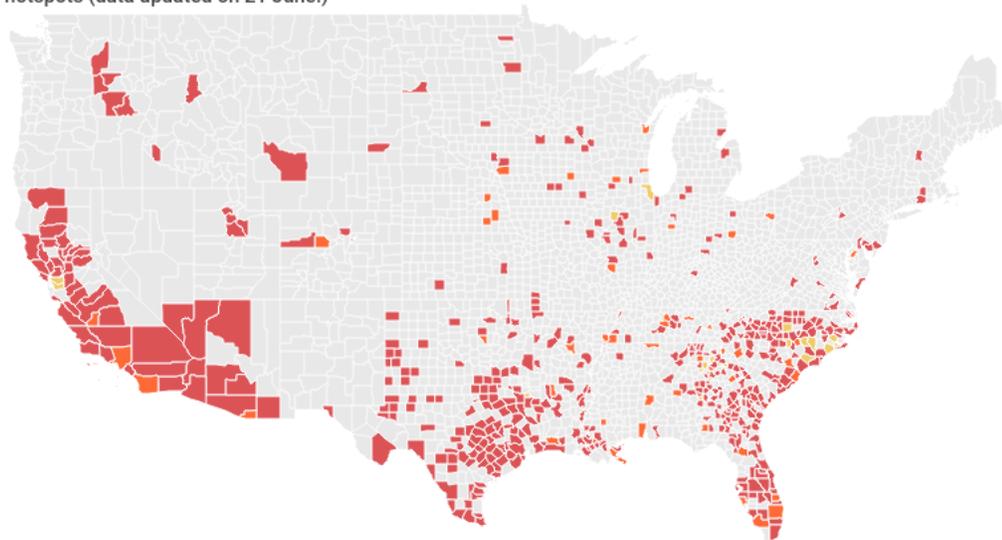
Re-openings in May Likely Fueled the Pandemic Resurgence

Rising infection risk and increased hospitalizations in the United States are likely the direct result of re-opening timelines, Memorial Day holiday gatherings, and overall quarantine fatigue, judging from available data. The relative calm in May was the result of April lockdowns; June is now exposing the results of the May re-openings.

- Most US states witnessed—at best—a plateau of cases when economies reopened in May as most governors were either not willing or able to withstand the heavy economic, political, and social pressure of waiting out a sustained, 14-day decline in new cases before easing lockdown measures.
- With high levels of the virus still circulating in major urban strongholds, even small triggers, like holiday and other social gatherings, appear to have recreated the necessary conditions for widespread community transmission in large parts of the country.

US Counties With High Levels of Infection Risk

The Sun Belt across the southwest and southeast of the United States has the greatest concentration of hotspots (data updated on 21 June.)



Risk classifications and gating criteria on infection risk (including rate of infection, transmission, and doubling rate) developed in partnership by Martin+Crumpton Group and Private Health Management.

The nature of local outbreaks in May possibly led some policymakers and business leaders to have a false sense of security and embark on reopening too aggressively, while not placing enough policy focus on the role contact tracing teams and universal mask usage can play in controlling transmission.

- In May, many of the localized spikes in Covid-19 case counts that emerged in rural areas and outer suburbs were attributable mostly to isolated outbreaks in prisons, meat processing plants, and nursing homes.
- As a result, local and state authorities shifted to a “fire extinguisher” policy of surging testers and tracers to these hot spots. This policy is insufficient in the face of sustained community spread, however.

Rising Hospitalizations in Major States Reinforce Indicators of Worsening Situation

While it is true that more widespread testing for Covid-19 can distort infection data and require careful additional analytic steps to parse, **hospitalizations and deaths are indisputable signs of an increase in overall risk.** Hospitalizations are rising most significantly in Arizona and Texas.

- It generally takes around two to three weeks for a newly infected patient who becomes severely ill to require hospitalization. As of 23 June, it has been 28 days since Memorial Day and 26 days since mass protests broke out across the country (large-scale protests took place on 27 May and 31 May).
- The governors of Texas and Arizona maintain that there is sufficient spare capacity in inpatient and ICU bed availability to manage the rising tide. That situation can deteriorate quickly, however, if infections continue to rise at a rapid clip and eat into surge capacity. The resumption of elective surgeries in reopening timelines creates an additional constraint on capacity.

Current Hospitalizations in Texas

Seven-day average of current hospitalizations. Data from 6 April to 21 June.

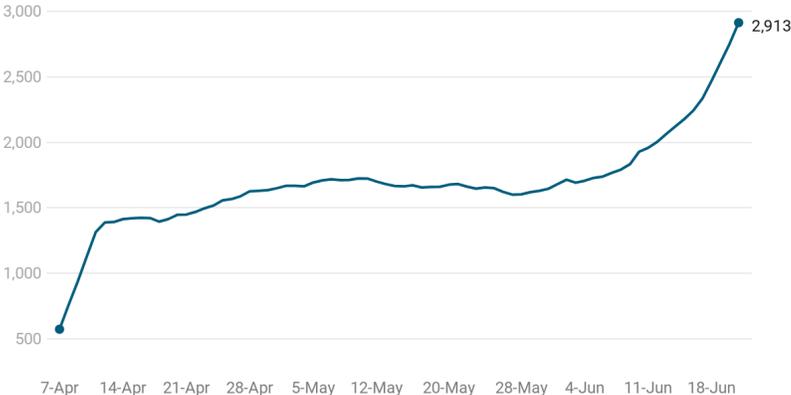


Chart: Martin+Crumpton Group LLC • Source: The Covid Tracking Project • Created with Datawrapper

It can take another one to two weeks for hospitalizations of severely ill patients to convert to deaths. While death rates stabilized across the country in May, death rates in US hotspots may rise in the coming weeks and should be monitored closely.

- Public health authorities in several emerging US hotspots have noted a larger percentage of younger people (in their 20s and 30s) testing positive. Since younger people are less likely to become critically ill from Covid-19, death rates may not rise as much as during the initial phase of the pandemic.
- If, however, younger people who are becoming infected are pre-symptomatic or asymptomatic and fail to test and isolate themselves, the virus could still spread to more vulnerable parts of the population, resulting in a higher death toll.

Current Hospitalizations in Arizona

Seven-day average of current hospitalizations. Data from 19 April to 21 June.

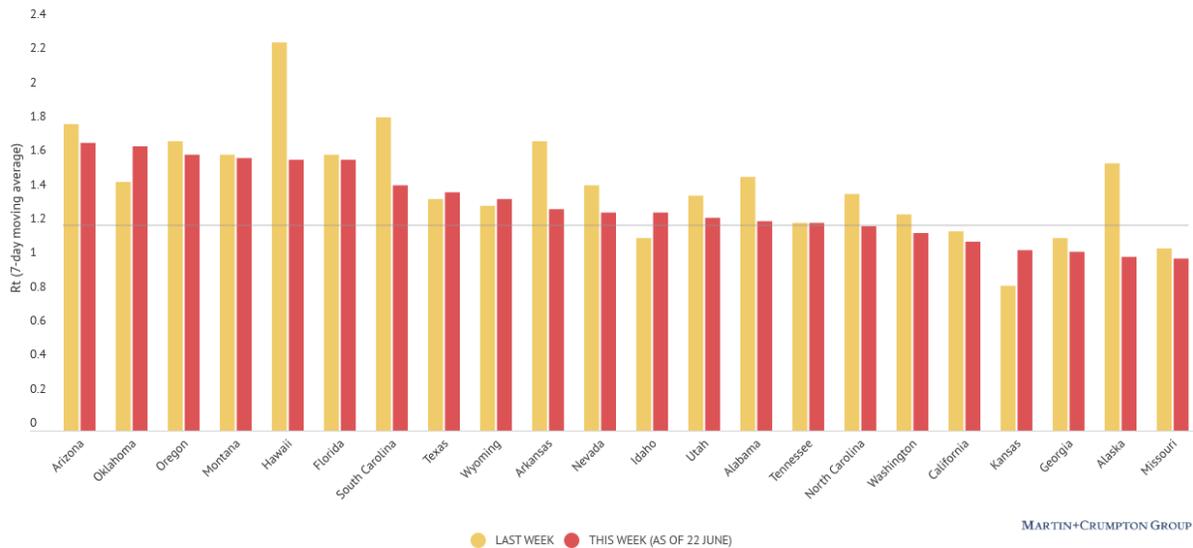


Chart: Martin+Crumpton Group LLC • Source: The Covid Tracking Project • Created with Datawrapper

In addition to a rise in hospitalizations, the test positivity rate (the percentage of people testing positive for Covid-19) has increased significantly in Arizona, South Carolina, North Carolina, Florida, Alabama, and Texas over the past week.

States Where Infection Transmission (Rt) Has Risen Above 1

The Effective Reproductive (Rt) number is a leading indicator on transmission that measures, on average, the number of infections resulting from a single infected person. As of 22 June, AZ (1.69), OK (1.69), OR (1.62), MT (1.6), HI (1.59), FL (1.59), SC (1.44), TX (1.4), WY (1.36), AR (1.3), NV (1.28), ID (1.28), UT (1.25), AL (1.23), TN (1.22), and NC (1.2) have Rt values above 1.2 - our high risk threshold. Rt is calculated by the Private Health Management (PHMC19) model.



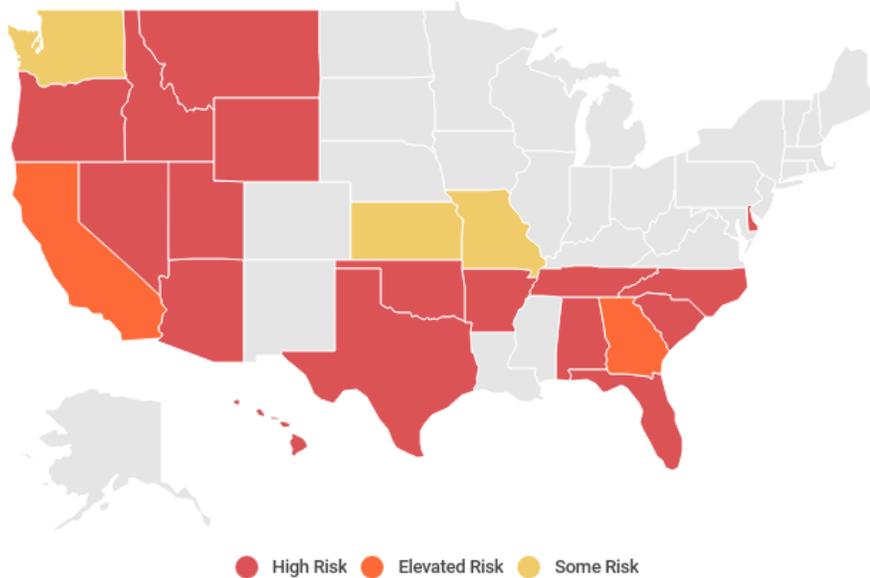
MARTIN+CRUMPTON GROUP

Made with infogram

The southeast region of the United States, which has seen a significant rise in infection risk, is also the region that ranks most poorly in M+CG's State Health Index. Our index is sourced from national health databases to identify those states that have the highest prevalence of chronic respiratory, kidney, liver disease, and diabetes—preconditions cited by the US Centers for Disease Control and Prevention (CDC) that can raise the rate of morbidity and mortality for Covid-19 patients. The index also applies population demographics to account for those states with the highest concentration of people aged 65+ and those living in poverty. High infection rates in these states can lead to higher death rates.

US States With High Levels of Infection Risk

Arizona, Texas, and much of the southeast have experienced record hospitalization rates in addition to a rapid increase in infections since Memorial Day.



Risk classifications and gating criteria on infection risk (including rate of infection, transmission, and doubling rate) developed in partnership by Martin+Crumpton Group and Private Health Management.

MARTIN+CRUMPTON GROUP

Models Suggest Possibility of Large Increase in Death Toll Over Coming Months

Most Covid-19 models project an approximately 14 percent increase in US deaths—around 136,000 total—by the Fourth of July holiday. Epidemiological models vary widely in the math and the tools that go into their design, the choice and weighting of data inputs, the extent to which they incorporate assumptions on human behavior, and the actual projections they make. These models generally do not account for possible compounding effects of mass protests in major cities across the United States in late May and early June.

- The IHME model, which has attracted heavy scrutiny because of its highly variable death projections, estimates US deaths will surpass 200,000 total deaths by 1 October.

Model Projections for Total US Deaths

The United States reported 119,854 total deaths on 21 June (Johns Hopkins University)

Model	Projection Date	Projection	Range	Notes
Northeastern University	11-Jul	131k	124k-143k	Assumes each state's current social distance policies will continue indefinitely
Columbia University	11-Jul	143k	133k-157k	Assumes 20% week on week decrease in people to people contact in places with growing weekly cases and a weekly 5% increase in states that have reopened
Johns Hopkins University	11-Jul	143k	137k-150k	Incorporates information on stay-at-home orders and assumes a ~25% reduction in social distancing measures once states re-open
University of Texas	11-Jul	133k	132k-135k	Uses anonymized mobile data and extrapolates mobility levels from week prior
MIT	11-Jul	134k	131k-138k	Assumes current interventions will continue indefinitely
Los Alamos	25-Jul	138k	126k-164k	Considers various interventions, assumes current stay at home orders remain in place
IHME	1-Oct	201k	172k-269k	Uses anonymized mobile phone data and data on testing, population density, self-reported mask use, annual pneumonia death rate, self-reported contacts
Private Health (PHMC19)	1-Oct	149k	143k-173k	Assigns more weight to transmission (Rt), does not make assumptions on social distancing measures

Source: Martin+Crumpton Group LLC, FiveThirtyEight

- Prominent public health expert Dr. Ashish Jha of the Harvard Global Health Institute has warned, using a simpler linear projection, that the US death toll could surpass 200,000 by September if it remains on its current course of around 800-1,000 deaths per day.

Epidemiological models are not designed to predict outcomes—rather, in drawing out a range of possibilities, the goal of the models is to help ensure that worst-case projections never come to pass. These models, if used properly, can help policymakers and business leaders make better decisions despite incomplete information on which interventions should be made and how to balance health imperatives against other critical economic, political, and social considerations.

- No model can project with certainty whether the United States will experience a catastrophic second wave (akin to the 1918 Flu Pandemic – see text box) or a series of “wavelets” across the country that swell in the fall-winter months.

US Still Lags in Several Respects Critical to Combating a Pandemic Resurgence

The United States has—at best—mixed performance on factors that are necessary to manage a second wave successfully, and the degree to which it improves its performance over the coming months will influence strongly whether businesses can maintain their operations and protect their workforces. These factors are:

- upgrading and expanding testing capacity to enable widespread community surveillance;

- creating and deploying a systematic method for contact tracing;
- expanding antibody testing to assess population immunity;
- applying our growing knowledge of the virus to both pharmaceutical and non-pharmaceutical interventions; and
- deploying effective drug therapies to buy time until a vaccine becomes available.

Efforts to Expand Testing

While the availability of Polymerase Chain Reaction (PCR) testing (to identify active infections) has grown significantly over the past two months, **it falls short of the level needed to contain outbreaks**, which requires widespread, regular testing of both asymptomatic and symptomatic individuals.

- As of 19 June, the United States was averaging 493,000 PCR tests daily, according to Covid Tracking Project data.

Estimates of what is considered “sufficient” testing once economies reopen vary. The Harvard Global Health Institute, for example, estimates that 900,000 tests daily are needed in the short term. The Rockefeller Foundation calls for 30 million tests weekly, or 4.3 million daily tests by autumn.

- The Rockefeller plan would cost about USD 100 billion, which the foundation deems reasonable given the heavier losses that came with shutting down the economy.

Efforts to Expand Contact Tracing

Most US states reopened before they had sufficient contact tracing teams in place. Some 100,000 contact trace hires are needed nationwide to cut the chain of transmission and enable quarantines for suspected and infected persons, according to the Johns Hopkins Center for Health Security and the Association of State and Territorial Health Officials.

- An Apple-Google digital app to augment and assist contact tracing efforts so far has fallen short, mired in privacy issues and hampered by the absence of a national contact tracing strategy.

Assuming asymptomatic transmission remains a significant vector for Covid-19 spread, both testing and tracing efforts will need to be comprehensive—that is, **applied regularly to broader segments of the population**—to contain outbreaks.

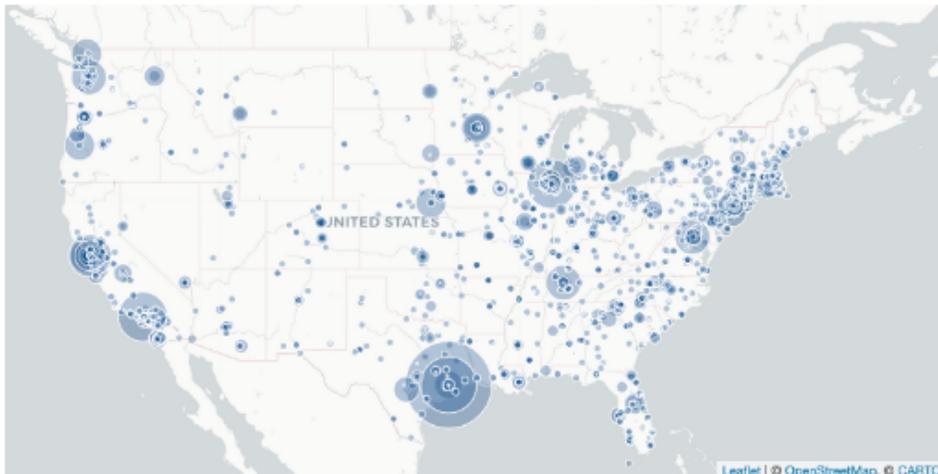
- Despite recent confusion created by a World Health Organization statement (later retracted) that asymptomatic cases are “very rare”, public health experts have estimated that **up to half of Covid-19 transmission is caused by people without symptoms**, though the breakdown of truly asymptomatic and pre-symptomatic patients with mild cases remains under study.

Efforts to Measure Population Immunity

Limited results from serological surveys so far indicate that the United States is still far from naturally reaching an estimated “herd immunity” level of around 60 percent, when virus transmission would slow significantly and allow for a return to relative normalcy. Serological surveys test for antibodies in blood samples of a sample population to estimate the percentage of people who have previously been infected with Covid-19 within a larger population.

- The results from these surveys will allow scientists to develop a more refined assessment of the infection fatality rate (IFR)—the proportion of infected people (including those who have

Mass protests could accelerate path to herd immunity



<https://countlove.org/blog/racial-justice-protests.html>

Emerging data in the coming days should clarify the effects of mass protests on Covid-19 transmission in major metropolitan areas across the country. Since protests have been primarily made up of young people and have taken place outdoors and in warm weather, the impact on morbidity and mortality rates could be mitigated. Moreover, higher infection rates overall could also accelerate the (still long) path to herd immunity in the United States. A significant rise in infection among protest participants without adequate testing, tracing, and quarantine measures, however, could seed new outbreaks and impact more vulnerable populations.

MARTIN+CRUMPTON GROUP

not been tested or have shown symptoms) who will die as a result.

- **Current IFR estimates converge** around a fatality rate of 0.5-1 percent.

Large-scale serological surveys led by the National Institutes of Health (NIH) are currently underway in six major metropolitan areas: New York City, Seattle, Los Angeles, San Francisco, Minneapolis, and Boston.

- The 5 May results of a [New York state survey](#) showed that 12.5 percent of New Yorkers had contracted the virus; nearly 20 percent of people in New York City tested positive for antibodies out of a sample of 1,300 workers from grocery and big-box stores.

The duration and degree of immunity once exposed to Covid-19 remains under study.

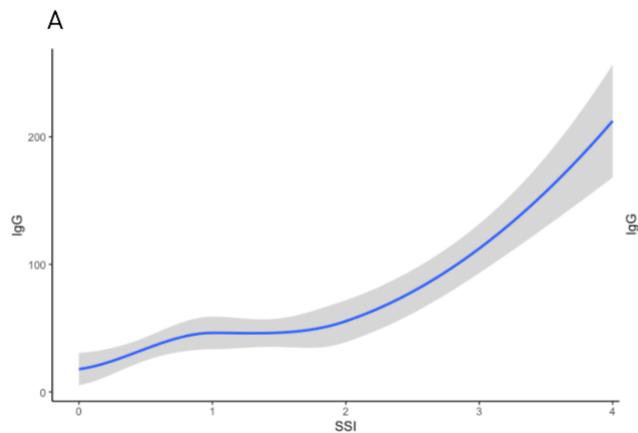
- So far, the evidence does not support a policy of “immunity certification” for people who receive a positive antibody test.

There is emerging scientific evidence that a higher severity of illness correlates with a stronger immune response.

- A [study conducted in China and published on 18 June in Nature Medicine](#) showed that IgG and neutralizing antibody levels dropped off significantly after eight weeks in asymptomatic patients, indicating a weak immune response.

- Epidemiologists had earlier estimated that immunity could last one to two years based on an examination of Covid-19 against comparable coronaviruses. This was based in part on the fact that immunity from SARS-Cov infections lasts around two years and around 34 months for MERS-Cov.

Severity of Covid-19 illness correlated with higher IgG antibody levels



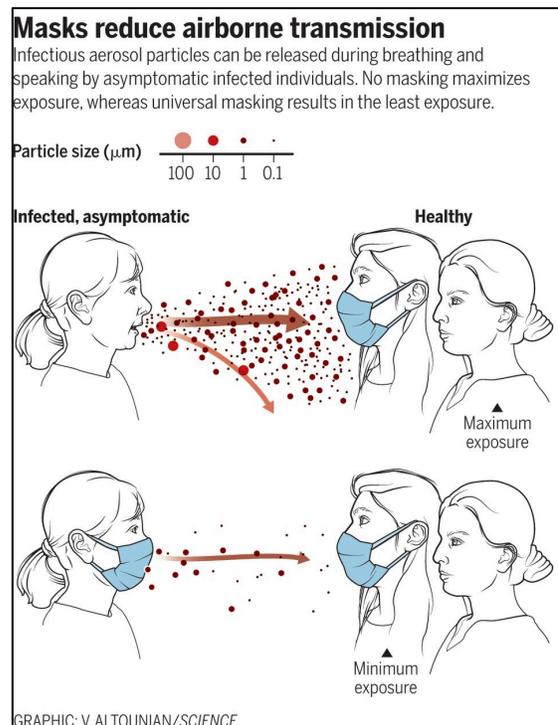
A May 23 preprint (not-yet peer-reviewed) study published in medRxiv showed a correlation between illness severity (Symptom Severity Index, or SSI) and higher IgG antibody levels in patient samples in New York.
<https://www.medrxiv.org/content/10.1101/2020.05.23.20111427v2.full.pdf>

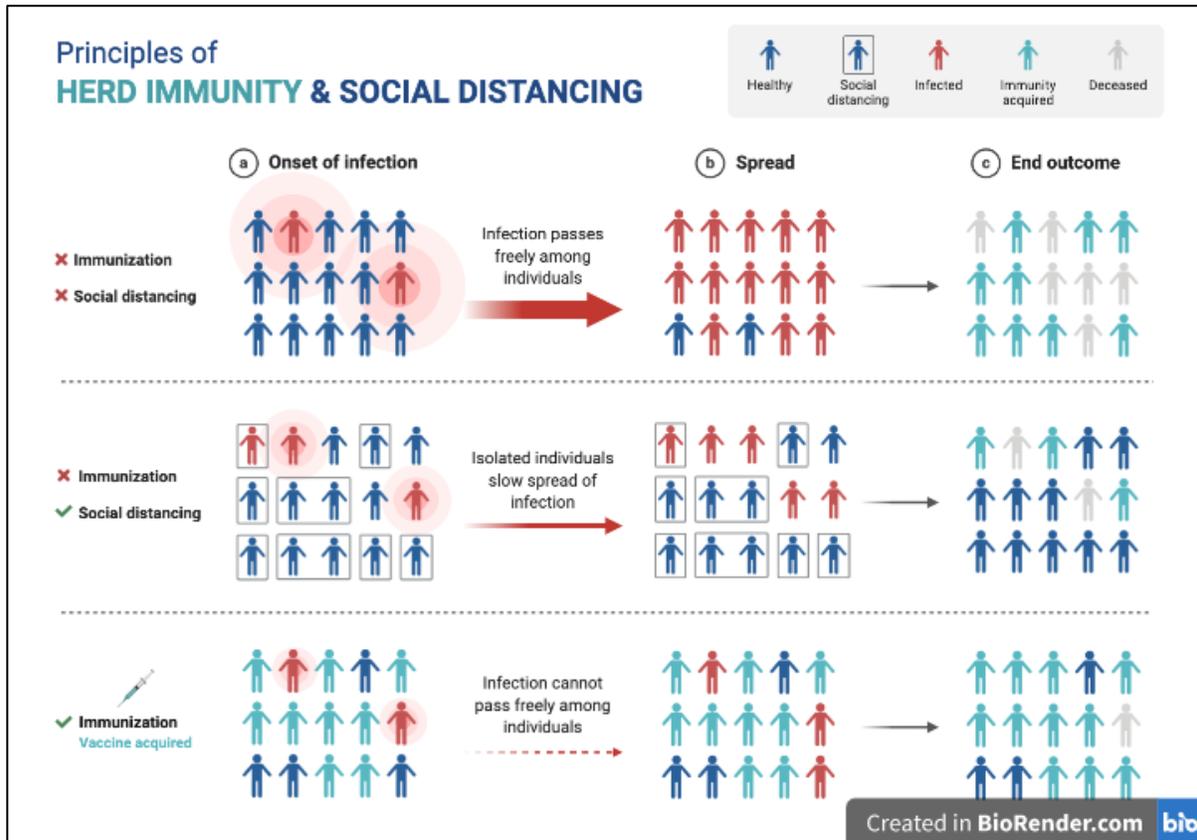
MARTIN+CRUMPTON GROUP

Application of New Insights to Slow Transmission and Improve Patient Outcomes

Lockdown measures bought time for scientists to build on the collective body of knowledge about the virus that could slow its spread and mitigate its morbidity and mortality rates. No longer dependent on limited data out of Wuhan and Italy, healthcare professionals now have a much broader patient dataset with which to refine treatment and shorten hospital stays.

- For example, doctors have learned that simply having patients lie on their stomachs could improve oxygen levels, reducing the need for, and associated risks of, intubation, an invasive procedure that involves placing patients on ventilators.
- Anticoagulants are under study for efficacy in reducing mortality rates following growing evidence that Covid-19 caused abnormal blood clots, which can lead to stroke and other life-threatening complications.
- A cheap, widely available steroid, dexamethasone, reduced deaths by 35 percent in patients on ventilators and 20 percent in those receiving oxygen, according to the results of a University of Oxford trial announced 16 June. If the full results of the study are validated, then this drug could be the most effective drug therapy to date for treating critically ill Covid-19 patients.
- Remdesivir, an antiviral drug developed by US pharmaceutical firm Gilead, has shown modest results in improving patient outcomes. The results of [a randomized, placebo-controlled trial published in the New England Journal of Medicine](#) showed that average hospital stays were reduced from 15 to 11 days.
- Progress has been made in the development of monoclonal antibodies (antibodies that can be isolated and manufactured at scale) as a preventative treatment for Covid-19. Clinical trials are expected to begin this summer or autumn for some of these treatments, but potential deployment at scale could be at least six months away, according to health experts.





Progress Toward a Vaccine

The United States, along with China and some European countries, are making significant progress in the race to develop a vaccine. As of 23 June, there were 144 vaccinations in development worldwide, 20 of which are in human trials.

- To accelerate the process, countries are permitting safety, dosage, and efficacy trials to operate concurrently, and manufacturing capacity is being built out before the vaccination has cleared all phases.
- Assuming a US-developed vaccine successfully passes Phase 3 trials as early as the autumn-winter, early 2021 remains an ambitious target for widespread deployment.
- The multiple vaccinations that emerge from this race may not provide complete protection from Covid-19. Early trials have shown efficacy in reducing severity of illness, but not in preventing infection and transmission.

Status of leading vaccines in human trials

After undergoing Phase I and II expanded safety trials, vaccines must pass a Phase III large-scale efficacy test before they can be deployed.

Type of Vaccine	Developer	Status
Genetic (mRNA)	Moderna (US)	Currently Phase II; July target for Phase III; Early 2021 target for deployment
Genetic (mRNA)	BioNTech (DE), Pfizer (US), Fosun Pharma (CN)	Phase I/II; Fall target for emergency use doses
Genetic (RNA)	Imperial College London (UK), Morningside Ventures (HK)	Phase I/II
Genetic (DNA)	Inovio (US)	Phase I
Viral vector	AstraZeneca (UK, SE), University of Oxford (UK)	Phase II/Phase III; Preparing manufacturing
Viral vector	CanSinoBIO, Academy of Military Medical Sciences (CN)	Phase II
Viral vector	Johnson & Johnson, Beth Israel Deaconess Medical Center (US)	Phase I/II to begin in July
Viral vector	Massachusetts Eye and Ear Hospital (US), Novartis (CH)	Phase 1 to begin late 2020
Protein-based	Novavax (US)	Phase I/II human trials
Protein-based	Clover Biopharmaceuticals (CN), GSK (UK)	Phase I
Whole virus	Sinovac (CN)	Phase I/II; Preparing Phase III and manufacturing
Whole virus	Sinopharm (CN)	Phase I/II, preparing manufacturing
Whole virus	Institute of Medical Biology at the Chinese Academy of Medical Sciences (CN)	Phase I
Repurposed	Murdoch Children's Research Institute (AU)	Phase III

Moderna, BioNTech-Pfizer-Fosun Pharma, and AstraZeneca-University of Oxford are receiving US funding as part of Operation Warp Speed

Table: Martin + Crumpton Group • Source: NYTimes, BioRendr • Created with Datawrapper

Nationalism will drive vaccination deployment at an early stage. Leaders in vaccine development, including the United States, China, and European Union, will likely prioritize vaccination for their populations first.

- The World Health Organization, the Coalition for Epidemic Preparedness, and GAVI are working to facilitate partnerships between vaccine developers and commercial manufacturers in lower-income countries.
- After national vaccination goals are met, China is likely to use vaccination deployment as a soft power tool in countries where it has strategic interests.

WHAT TO DO

An Intelligence-driven Framework Can Help Companies Navigate Pandemic Volatility

The inherent complexities of the pandemic's progression are beyond the control of any single private-sector actor, but business leaders can still anticipate and mitigate pandemic risks for their own employees, facilities, and customers through the use of a robust intelligence-driven framework. Such a framework marries data-driven analytics to a customized, operational decision matrix that equips decision-makers with actionable insights about the complex, rapidly shifting, and politicized operating environment.

- Translating a complex set of key data metrics into actionable insights requires an expert understanding of how to read the data to avoid dangerous analytic pitfalls.

An aggregation of data on infection, transmission, testing, deaths, and hospitalization metrics at the state and county levels (shown at right) provides the framework's foundation.

- Scientifically grounded gating rules and risk classifications tied to triggers for action provide a customized playbook for businesses to plan for contingencies and ensure rapid response.

Key Metrics for Tracking Covid-19 Risk

Metric	Why It Matters
Infection Rate	
No. of new cases per 100k (7-day moving average)	Assesses weekly infection trendline and establishes uniform basis of comparison across locations
Doubling Rate	Measures the number of days it takes for cases to double (a doubling rate of less than 1 week is high risk; 1-3 days indicates exponential growth)
Transmission	
Effective Reproduction Number (Rt) (7-day moving average)	Measures the average number of new infections resulting from a single infected person. An Rt above 1 is a warning sign and above 1.2 is higher risk for exponential growth
Mobility rate	Evaluates anonymized, publicly available data provided by Google and Apple to assess percentage changes in mobility linked to different types of destinations; Provides context to the Rt in assessing drivers of transmission.
Testing	
Test positivity rate	Tracking the percentage of tests that come back positive can indicate whether outbreaks are coming under control. A test positivity over 10 percent is a warning sign that infection spread is increasing.
No. of new tests per 100k (7-day moving average)	Provides context on whether spikes or significant declines in testing are distorting infection metrics on new cases; Assesses whether states are meeting testing per capita benchmarks.
Hospitalizations	
Spare bed capacity (regular and ICU)	Assesses whether the healthcare system is in danger of becoming overwhelmed; Less than 20 percent spare capacity in regular and ICU beds represents high risk.
Deaths	
No. of new deaths per 100k (7-day moving average)	A lagging, but reliable indicator to assess cost in human lives and whether healthcare system is meeting demand in treating severe cases.

Political and Policy Variables Are Crucial to Informed Decision-Making

Beyond the characteristics of the virus and its spread, **political disputes and differing policy approaches to pandemic response among US local, state, and federal officials add further layers of uncertainty and ambiguity for businesses, placing an even bigger burden on executive leaders to make informed decisions on when and how to scale up interventions to protect employees and mitigate major business disruptions.**

The United States is divided broadly between governors who took a heavy, top-down approach to reopening, and those who largely deferred to county and city officials to set policy. Both approaches carry unique complexities and risks for businesses to navigate.

On one end of the spectrum, the governors of Texas, Arizona, and Georgia have written into law that the governor's executive order supersedes all local orders.

- In hard-hit major metro areas of Texas and in Atlanta, this has resulted in local officials trying to impose non-enforceable restrictions that are directly at odds with the state.

On the other end of the spectrum, the governors of California, Wisconsin, Illinois, Pennsylvania, Washington, and Oregon have attempted a top-down, but cautious, data-driven approach to reopening, county by county.

- In Wisconsin, the state Supreme Court overturned the governor's emergency order, and local authorities are still scrambling to figure out how to issue local health ordinances that will hold up in court.
- In California, Governor Gavin Newsom succumbed to pressures and accelerated the reopening to avoid becoming reactive to local rebellions. Governors in Illinois, Pennsylvania, and Washington have all battled legal challenges.

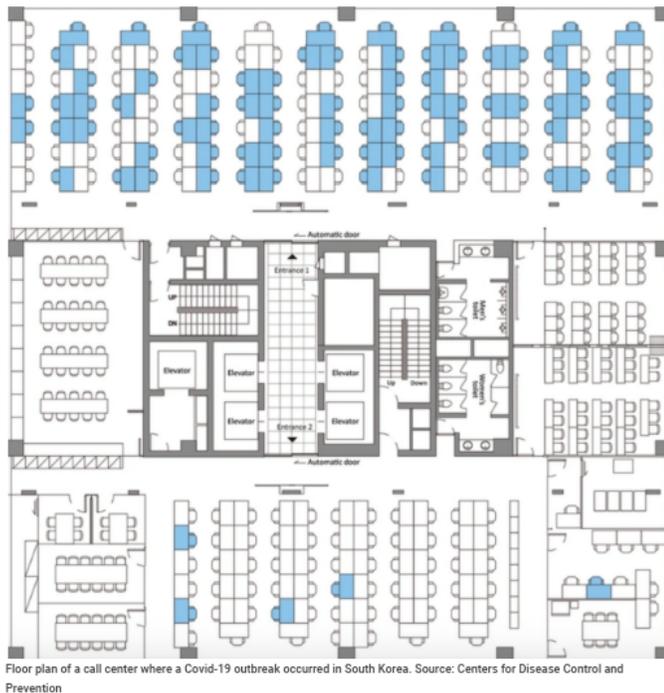
In the middle are states like Tennessee, Kansas, Maryland, and Missouri that have allowed counties to set their own policy, creating a maze of regulations within the state for businesses to interpret.

With infection rates and hospitalizations rising, some governors are changing tack, for example, in the cases of Arizona and Texas, by ceding some legal authority to local officials on issues like mask mandates.

- Governors who have been more aggressive in reopening policies may try to avoid assuming political responsibility for ordering unpopular business restrictions by delegating authority to local officials where pandemic risk is rising.

At this stage of the pandemic and economic reopening, businesses must assume a greater responsibility for most critical elements to combatting the virus: testing, tracing, and isolation. By doing so, businesses will significantly improve their chances of avoiding major operational disruptions and keeping their workforce—and community—safer.

- Testing options (PCR diagnostic tests for active infection and antibody testing for prior infection) have expanded considerably since the early stage of the pandemic. Businesses can now employ at-home (or at-work) testing kits, to include a noninvasive saliva test developed by Rutgers University, to test employees.
- A workforce testing program can be customized to account for the infection risk in a particular location, the risk exposure of workers, and the type of workplace.
- A comprehensive testing advisory service can help businesses determine the right design and cadence for both PCR and antibody testing, process results with partnered labs, vet for reliability, and safeguard employee health privacy through a confidential reporting system.
- Customized safety protocols, developed by health and risk management experts, can be applied rationally to a business to ensure rapid response when an employee is suspected or confirmed to be infected with Covid-19.

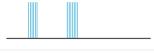
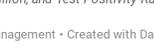


An Example of Workplace Transmission

Enclosed, unventilated airspace, such as in a corporate office building, presents a high risk of Covid-19 transmission. This necessitates a fundamental rethink of the workplace and underscores the critical role that universal mask wearing and social distancing can play in controlling infection risk as businesses reopen. In this example, a call center on the 11th floor of a 19-story building in downtown Seoul was the scene of a major outbreak. Ninety-seven people in the building tested positive, 94 of whom worked on the call center floor where employees worked in close proximity to each other.

Covid-19 Risk Assessment of States (1/2)

Risk classifications are derived from gating criteria developed in partnership by Martin+Crumpton Group and Private Health Management. All indicators are calculated as a seven-day average and were updated on 21 June.

State	Risk Level	Daily New Cases per 1 Million	Rt	Test Positivity Rate	Daily New Deaths per 1 Million	Current Daily New Deaths per 1 Million
Alabama	High Risk	 128	1.23	9.3%		2
Alaska	Low Risk	 18	1.02	0.6%		0
Arizona	High Risk	 331	1.69	20.4%		3
Arkansas	High Risk	 142	1.30	5.8%		2
California	Elevated Risk	 95	1.11	4.8%		2
Colorado	Low Risk	 35	0.68	3.9%		1
Connecticut	Low Risk	 31	0.42	1.4%		2
Delaware	High Risk	 75	0.69	3.9%		2
District of Columbia	N/A	 51	N/A	1.7%		4
Florida	High Risk	 144	1.59	11.4%		2
Georgia	Elevated Risk	 101	1.05	8.3%		3
Hawaii	High Risk	 9	1.59	1.1%		0
Idaho	High Risk	 49	1.28	6.1%		0
Illinois	Low Risk	 48	0.55	2.6%		4
Indiana	Low Risk	 53	0.73	4.0%		2
Iowa	Low Risk	 92	0.79	6.3%		2
Kansas	Some Risk	 51	1.06	5.5%		1
Kentucky	Low Risk	 42	0.89	5.7%		1
Louisiana	Low Risk	 92	0.83	3.1%		3
Maine	Low Risk	 18	0.83	1.5%		0
Maryland	Low Risk	 62	0.59	4.8%		3
Massachusetts	Low Risk	 30	0.36	2.4%		5
Michigan	Low Risk	 24	0.68	1.8%		1
Minnesota	Low Risk	 62	0.73	2.8%		2

Rt calculated by Private Health Management model. Daily New Cases per 1 Million, Daily New Deaths per 1 Million, and Test Positivity Rate are all calculated based on a 7-day moving average.

Table: Martin+Crumpton Group LLC • Source: Covid Tracking Project; Johns Hopkins University; Private Health Management • Created with Datawrapper

Covid-19 Risk Assessment of States (2/2)

Risk classifications are derived from gating criteria developed in partnership by Martin+Crumpton Group and Private Health Management. All indicators are calculated as a seven-day average and were updated on 21 June.

State	Risk Level	Daily New Cases per 1 Million	Rt	Test Positivity Rate	Daily New Deaths per 1 Million	Current Daily New Deaths per 1 Million
Mississippi	Low Risk	 16 → 54	0.79	4.6%		2
Missouri	Some Risk	 7 → 46	1.01	5.5%		2
Montana	High Risk	 7 → 16	1.60	1.0%		0
Nebraska	Low Risk	 3 → 80	0.75	5.9%		2
Nevada	High Risk	 12 → 95	1.28	6.5%		1
New Hampshire	Low Risk	 7 → 24	0.63	2.3%		2
New Jersey	Low Risk	 49 → 38	0.43	1.5%		5
New Mexico	Low Risk	 6 → 53	0.77	2.7%		2
New York	Low Risk	 204 → 34	0.47	1.0%		2
North Carolina	High Risk	 7 → 97	1.20	7.3%		1
North Dakota	Low Risk	 7 → 39	0.77	2.2%		1
Ohio	Low Risk	 8 → 45	0.91	3.8%		2
Oklahoma	High Risk	 5 → 82	1.67	7.2%		0
Oregon	High Risk	 6 → 40	1.62	4.3%		1
Pennsylvania	Low Risk	 12 → 30	0.61	3.9%		2
Rhode Island	N/A	 9 → 77	0.46	1.7%		2
South Carolina	High Risk	 10 → 163	1.44	10.9%		1
South Dakota	Low Risk	 5 → 64	0.78	5.2%		1
Tennessee	High Risk	 13 → 100	1.22	6.6%		1
Texas	High Risk	 5 → 120	1.40	10.3%		1
Utah	High Risk	 12 → 128	1.25	11.0%		1
Vermont	Low Risk	 25 → 8	0.50	0.5%		0
Virginia	Low Risk	 5 → 58	0.70	4.5%		1
Washington	Some Risk	 28 → 54	1.16	17.0%		1
West Virginia	Some Risk	 3 → 19	0.96	1.3%		0
Wisconsin	Low Risk	 13 → 51	0.84	3.2%		1
Wyoming	High Risk	 0 → 34	1.36	3.8%		0

Rt calculated by Private Health Management model. Daily New Cases per 1 Million, Daily New Deaths per 1 Million, and Test Positivity Rate are all calculated based on a 7-day moving average.

Table: Martin+Crumpton Group LLC • Source: Covid Tracking Project; Johns Hopkins University; Private Health Management • Created with Datawrapper

Lessons from the Second Wave of the 1918 Flu Pandemic

Distractions created by World War I, widespread transmission across Europe among soldiers, public disinterest in maintaining social distancing measures, and the suspected emergence of a more virulent strain created a deadly second wave of the 1918 flu pandemic that ended up claiming at least 50 million deaths worldwide. The 1918 Flu Pandemic had an infection rate of around 2.5 percent and occurred in three distinct waves in the United States: the first wave was a milder wave in the spring of 1918 that emerged in army camps among soldiers returning from the war, the second was a highly fatal wave in the fall of 1918 and a third significant wave occurred in the winter of 1918-1919. In response to the first wave, government officials imposed a range of restrictions, including business closures, staggered shifts, school closures, and bans on public gatherings.

Whereas China has been the primary scapegoat for the Covid-19 pandemic, rumors circulated in 1918 that the Germans deliberately seeded the epidemic in the United States. As Lt. Col. Philip Doane, head of Health and Sanitation Section of the Emergency Fleet Corporation said in September 1918, “the Germans have started epidemics in Europe, and there is no reason they should be particularly gentle with America.”

Local reporting from the period preceding the second wave indicated that the public had lost interest in and, in some cases, openly rebelled against restrictions imposed in cities like San Francisco, Denver, Atlanta, Philadelphia, Pittsburgh, Boston, and Cleveland. Religious groups sued city governments, and business owners lobbied governments to end the closures. In San Francisco, an Anti-Mask League carried out protests.

- Despite new cases emerging in many cities, bans on public gatherings were dismissed in many cities to allow for Nov. 11 Armistice Day celebrations, where thousands gathered and few wore masks.

An [April study published in JAMA](#) showed how those cities that were quick to impose aggressive lockdowns and endured them for longer, including Chicago, Los Angeles, and New York, were able to slow infection and death rates overall, while cities where restrictions were hastily lifted, including Philadelphia, New Orleans, San Francisco, and Nashville, saw much bigger spikes in deaths.

- A June study by a group of MIT and Federal Reserve economists on the 1918 interventions did a comparative study of similar cities (Minneapolis and St. Paul; Los Angeles and San Francisco; Cleveland and Pittsburgh) to demonstrate that those cities that were quick to impose and maintain aggressive restrictions also fared better economically.