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FEATURE

Why We're Losing the Battle With Covid-19

The escalating crisis in Texas shows how the chronic underfunding of public health has put America on track for the worst coronavirus response in the developed world.

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In the early days of May, Umair Shah, director of the public-health department in Harris County, Texas, was feeling hopeful. It looked as if his county might succeed in controlling the coronavirus outbreak. The number of new cases per day had plummeted to an average of about 50 from a peak of 239 in early April, and it was holding steady. On the charts that Shah studied on his computer each morning, the uptick — a mountain that had been rising into existence for weeks — had given way to a plateau. The virus wasn't disappearing. But it wasn't spreading rapidly anymore, either.

That stalemate was no small feat. For one thing, Harris County stretches across 1,800 square miles of the state's southeastern edge. The region includes two international airports, four international seaports and the city of Houston. The first case was confirmed there in early March, around the same time that cases first popped up in New York, and modelers initially worried that the county's hospitals and morgues would be overrun — just as New York City's eventually were.

For another thing, the work itself was grueling. By early May, Shah's staff had logged 16-hour days, six or seven days a week, for two months. Contact tracers and outreach workers had made thousands of phone calls: to persuade people exposed to the virus to report their symptoms, get tested and self-isolate; and to prevail on businesses, apartment complexes and nursing homes to hang more hand-washing signs and distribute informational pamphlets. Scientists had processed reams of data that flooded the health department's offices through every conceivable portal. And computer engineers had labored ceaselessly over urgently needed technological upgrades. This work was done in what felt like the forgotten shadows of a roaring public spectacle. None of it inspired nightly rounds of public cheering, nor even much media attention. But Shah felt that it had made the difference. The fight unfolding in hospitals around the country was truly heroic, but the key to stopping a pandemic was preventing as many people as possible from landing in hospitals in the first place.

Harris County as a whole was still reeling from a brutal few years: Zika in 2016, Hurricane Harvey in 2017 and a string of floods and petrochemical fires in the years since, including one so relentless that for a full week in 2019 you could see thick black plumes stretching across the horizon from almost anywhere in the county. Shah and his colleagues were still grappling with the fallout from each of those catastrophes, plus endemic chronic illness in the county's lower-income communities, a shortage of treatment for the seriously mentally ill (the county jail was the largest psychiatric facility in the entire state) and an uninsured rate of 20 percent that overlapped with and exacerbated everything else.

Dr. Umair A. Shah, right, executive director of Harris County Public Health, with the Harris County judge, Lina Hidalgo, center, visiting the Bear Creek Park testing site last month, with Franaldo Curl, the site supervisor. Rahim Fortune for The New York Times

Shah and his team had not been particularly well armed for any of these fights. Decades of research shows that a robust national public-health system could save billions of dollars annually by reducing the burden of preventable illnesses and keeping the population healthier over all. But like most public-health departments across the country, Harris County's was grossly underfunded. Shah likes to think of his fellow public-health practitioners as the offensive line of a football team whose fans know only the quarterback: clinical medicine. Except that when a football team has a great season, the owners continue to invest in the offensive line, recognizing that it is crucial to the quarterback's success. "In public health we do the opposite," he told me recently. "When tuberculosis rates decline or tobacco use goes down, we cut those programs."

Shah, an internist, started out on the quarterback side of things, but his parents pressed him from early on to "do well, and do good," and to his mind, public health was the best way to fulfill that charge. His department employed just 700 or so people in a broad range of health-promotion efforts, from mosquito control to maternal health and child health. He recently secured a $15 million budget increase, thanks to some aggressive lobbying and a turn in political fortunes: The Commissioner's Court, which controlled the health department's budget, turned Democratic during the previous election for the first time in a generation. But even that had not been enough. When the county confirmed its first SARS-CoV-2 cases, the department had just 10 epidemiologists on staff, or less than one for every 180 square miles. As with every emergency, Shah's team was forced to suspend its other programs — fighting diabetes, curbing smoking and preventing heart disease, for example — in order to confront this newer threat.

Shah was amazed at what they had been able to achieve: a monthlong stalemate against the pandemic of the century. But he also knew that success was fragile, and he wasn't completely surprised when it began to evaporate in mid-June. The people of Texas and officials at every level were bitterly divided over how to balance public health and private liberty — whether people could be ordered to wear masks or to close their businesses for the greater good and, if so, for how long. Politics had won out far too often over sound science. As a result, the state's reopening had been hasty and poorly coordinated. And now, a month and a half in, case counts were rising and intensive-care units were bracing for an onslaught.

Texas was not alone. In other countries, officials locked down entire cities and employed large-scale, high-tech surveillance programs to stop the virus from spreading. In the United States, decades of near-total neglect had left the entire public-health apparatus too weak and uncoordinated to mount even a fraction of that response. The Centers for Disease Control and Prevention, the nation's leading public-health department, had stopped holding its own news conferences in early March. Instead updates came from President Trump's daily coronavirus briefings, which offered a cascade of contradictions about how the national response was going and who was in charge of what. State and local health departments were a hodgepodge: some were well-funded and coordinated regularly with one another, others were siloed, and most were reliant on political leaders to enact their suggested measures. Without any clear guidance or coherent national strategy, states were on their own. In March and April, governors found themselves bidding against one another for ventilators and personal protective equipment. In May, several states — not just Texas — rushed to reopen. And by late June, case counts were surging in at least 20 of them.

The country was on track to achieve the least successful coronavirus response in the developed world, with the most total cases, the highest death toll and the worst projections for late summer and early fall: tens of thousands more deaths by year's end, according to the most trusted models. And that wasn't even accounting for a possible "second wave." Or for flu season or hurricane season, either of which would almost certainly worsen the current crisis.

As the plateau on his computer screen gave way to another mountain, Shah worried that his team was too exhausted and demoralized to continue. Public-health interventions work best when the forces of politics and culture are aligned behind them — when elected officials provide the necessary resources, and citizens abide by the necessary strictures. Even now, with hospitals filling up, such convergence seemed unlikely. The people of Harris County were tired, too, he guessed. They had sacrificed many freedoms and no small amount of financial security so that officials like him could have a chance to get the outbreak under control. The economy was in tatters now, and the virus was still spreading. How would they ever persuade people to use masks or stand six feet apart or shelter in place again, when those edicts had — seemingly, at least — failed to work the first time?

Modupe Allen, left, a nurse practitioner, and Joyce Kadara, a registered nurse, at a drive-through testing center at Bear Creek Park in Houston. Rahim Fortune for The New York Times

In the past century, the largest gains in human health and life expectancy have come from public-health interventions, not medical ones. Clinical medicine — treating individual patients with medication and procedures — has registered enormous gains. Hepatitis C is now curable; so are many childhood cancers. Cutting-edge gene therapies are curing rare genetic disorders, and new technology is making surgeries of every kind safer. But even stacked against those triumphs, public health — the policies and programs that prevent entire communities from getting sick in the first place — is still the clear winner. "It's saved the most lives by far, for the least amount of money," Tom Frieden, a former director of the C.D.C., told me recently. "But you'd never guess that based on how little we invest in it."

Think of the factors that determine a society's health as a pyramid, Frieden says, in which the things that have the biggest impact on the most people are afforded the most space. Social policies that mitigate economic inequality would be at the base of the pyramid, followed immediately by public-health interventions like improved sanitation, automobile-and-workplace-safety laws, clean-water initiatives and tobacco-control programs. Clinical medicine would be closer to the top. "Now consider the way that we value and prioritize those factors," Frieden says. "It's almost completely inverted." Less than 3 percent of the country's $3.6 trillion total annual health care bill is spent on public health; a vast majority of the rest goes to clinical medicine.

The main reason for that discrepancy is simple, historians say: Americans don't like being told what to do. We want to be protected from infectious diseases and dirty water and bad food and crazed gunmen. But not in a way that undermines our freedom. That ambivalence was baked into our public-health institutions from the start.

As Susan Reverby writes in a history of the infamous Tuskegee, Ala., syphilis study, the United States Public Health Service — a commissioned corps of medical officers led by the surgeon general — is almost as old as the country itself and has been loathed and revered in equal measure for about as long. At the turn of the previous century, commissioned doctors had the same reputation for service and self-sacrifice as soldiers. They were known to infect themselves with the diseases they studied, in a selfless quest for treatments and cures, and they earned wide praise for their efforts to keep sexually transmitted infections from decimating the armed forces during both World Wars. But they were also seen as condescending outsiders in many of the communities they served. In 1922, Reverby notes, one health officer in Birmingham, Ala., was "dragged from his home, placed against a tree and whipped, because of his 'Kaiser-like and highhanded actions.'"

As long as yellow fever and cholera and smallpox ravaged the country at regular intervals, public officials had broad discretion in quelling such threats. But that power waned quickly as plagues became less common. The surgeon general became more a cheerleader than a high-profile public figure, and the United States Public Health Service faded into the deep background of American bureaucracy. "In the 1700s and 1800s state and local officials could do all sorts of things in the name of public health, like close businesses and hold ships at port and forcibly quarantine people, that they could not otherwise do," says Wendy Parmet, a public-health legal scholar at Northeastern University. "But by World War II those powers lost their pre-eminence."

The C.D.C. was established in 1946, in the wake of that shift, with a small budget and almost no regulatory power. To this day, C.D.C. powers are limited. Officials can bar cruise ships from sailing, but they cannot compel states to collect or share data on many health metrics, like rates of asthma or cancer in a given community, nor force them to meet any specific health standards. "They treat the states like clients," says Shelley Hearne, a professor of public health at Johns Hopkins University. "They provide funds and issue recommendations. But they don't hold any feet to the fire."

Sanathan Aiyadurai, a medical intern, who has his picture pinned to his protective gear, holding the hand of a Covid-19 patient at United Memorial Medical Center in Houston. Rahim Fortune for The New York Times

In 1988, the Institute of Medicine, an independent nonprofit group, now known as the National Academy of Medicine, published a seminal critique of the nation's public-health apparatus. The system, the authors wrote, was arbitrary, reactive and wildly uneven from one part of the country to another. Crises tended to be addressed, or not, based on political will, not scientific knowledge. Investment in public-health programs was thin in many places, and the capacity to gather and analyze essential data was poor. Leadership was also weak and unstable, with health departments increasingly staffed by political appointees instead of career civil servants. And schools of public health had become too academic and divorced from the actual needs of public-health agencies. What's more, the relationship between medicine and public health was plagued by "confrontation and suspicion." Medical leaders, the report noted, were often unaware of public-health activities that they themselves were crucial to implementing. There also seemed to be no clear coordination among federal, state and local health departments nor much agreement on who was in charge of what. "Responsibilities have become so fragmented," the authors wrote, "that deliberate action is often difficult if not impossible."

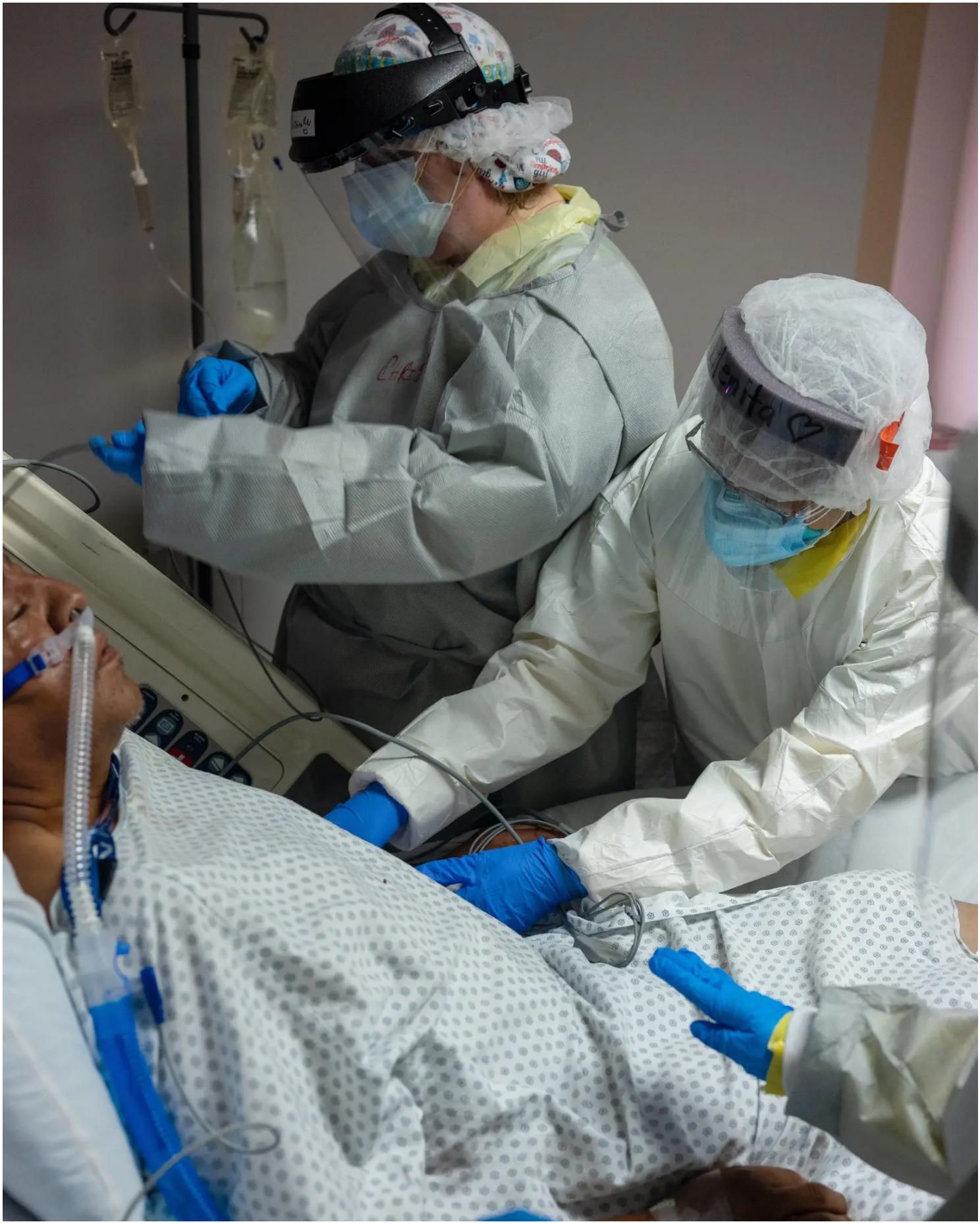
The institute published a follow-up report 15 years later indicating that few of those problems had been solved. The public-health system was still neglected and subject to political whims; the work force was still insufficient and the infrastructure and technology still dangerously outdated. Around that time, Hearne created a nonprofit, Trust for America's Health, and began ranking all 50 states based on how prepared each was for a global pandemic. She considered factors like how many epidemiologists the state health departments had, how robust their laboratories were and what their pandemic preparedness plans looked like. What she found worried her. Some states had no such plans, and many others had plans that had never been tested or even discussed with key stakeholders, like hospitals and fire departments. One state refused to disclose its plan at all, even to its hospitals. "They were like, 'We have a plan, but it's a state secret,'" Hearne told me recently. "And we were like, 'How can it be a plan if nobody knows about it?'"

The health commissioners themselves tended to be inexperienced — many obtained their positions through personal connections — and to sit very low in the political hierarchies of which they were a part. Several had never even met their governors in person. As their reactions to Hearne's evaluations showed, they were also fearful. Some health commissioners accused Hearne's group of effectively hanging a neon sign telling terrorists exactly where to attack. Others insisted that the negative attention would only hamper efforts at improvement. "One official called me screaming that she would be hauled in front of her Legislature and have her budget cut over this," she recalled. "I learned swear words I have never heard before, and I'm a Jersey girl."

Resolve stiffened and funding flourished, for a time, and progress was made as a result. "Lots of local health departments finally came online in those years," Hearne says, "and some great pilot programs were launched that tried to integrate chronic-disease prevention and pandemic preparedness." But most efforts flamed out by mid-decade, once the specter of bioterrorism faded. And when the global recession arrived, budgets were cut further, programs were shuttered and any lingering attention being paid to public health turned quickly but quietly elsewhere.

Between early March, when the first cases of coronavirus were detected in Harris County, and May 1, when Gov. Greg Abbott began his phased reopening of the entire state, the Harris County chief executive, Lina Hidalgo, was sued at least five times. She was sued over a rodeo closure, bar closures and church closures. She was sued over mask edicts. She was also called a tyrant, a fear-mongerer and a fool and told her political career would be over. She was trying to follow the science anyway.

Abbott originally left the coronavirus response to local leaders like her, because, he said, the state was too big for a one-size-fits-all plan. But in late March, he reversed course and issued a statewide order superseding all existing local ones. Now, in May, he was lifting that state order and loosening restrictions far more aggressively than scientists advised or local officials like Hidalgo were comfortable with. Abbott's plan involved opening the economy in phases. The first phase included restaurants, retail shops and movie theaters, all at 25 percent capacity, beginning on May 1. On May 18, the second phase would begin, and Abbott would expand both the kinds of businesses that could open and the capacity at which they could operate.



Christina Mathers, left, and Elenita Gumtang, both registered nurses, caring for a patient at United Methodist Medical Center in Houston. Rahim Fortune for The New York Times

The governor promised that each phase could be adjusted or possibly delayed if case counts rose in the interim. But critics said that his timeline moved too quickly to measure those upticks. It would take several days for people to take full advantage of the lifting of restrictions, and at least two weeks beyond that to see the impact on the virus's spread. In the meantime, almost none of Abbott's own criteria for a safe reopening were being met. Testing capacity was still limited, and contact tracing had yet to be sufficiently scaled up. Officials had no hope of pinpointing potential case surges or of keeping them in check. And if they could not contain the virus once they reopened, the entire shutdown would have been for nothing.

Hidalgo was well versed in the pathologies of government failure. She was born in Colombia during the height of the country's bloody drug war, then lived in Peru during President Alberto Fujimori's war against the Maoist rebel group Shining Path, then in Mexico after the fall of the P.R.I., a political party that ruled the country for decades in quasi-dictatorial fashion. It was not until her family settled in Harris County and she began attending public high school that she saw what effective government looked like. "The school was amazing," she told me recently. "It had a film room and a tennis court. And it made me really think a lot about why government works sometimes in some places but not other times in other places." It also made her want to maximize the potential of good government, so that it could reach as many people as possible.

She was planning a career in advocacy, figuring she would beat the system into shape from the outside. But after the 2016 presidential election and a year at Harvard's Kennedy School, she grew impatient for change and decided to run for office. Friends and advisers encouraged her to start with a local school board. But she wanted to pull on multiple levers at once — to improve not only education but also criminal justice, urban planning and public health. In Texas, a judgeship (which in larger counties is an executive role and not a judicial one) would enable her to do all those things. When she won in the fall of 2018, she became the first Democrat in a generation, and the first woman and first Latina, to win the seat in Harris County. Some of her critics complained that at 27, she was hardly ready for prime time. Others nicknamed her Dora the Explorer, after the Nickelodeon character. But when SARS-CoV-2 arrived, she had already steered the county through a tropical storm, three chemical fires, an oil spill and two large floods, all "without major missteps," according to The Houston Chronicle.

Infectious-disease outbreaks were trickier. Viruses were invisible — and slow. It took weeks to know if any given decision was the right one, and in the meantime constituents clamored for officials to do less, not more. When Hidalgo erected a temporary field hospital in April so that intensive-care units would not be overwhelmed by a surge of coronavirus infections, Republican lawmakers accused her of wasteful overreaction. When she ordered the release of low-risk inmates from the county jail, in an effort to prevent an outbreak there, a district judge ordered the sheriff to ignore her edict. And when she made masks mandatory in all public spaces, Lt. Gov. Daniel Patrick singled her out for rebuke. Other county executives issued similar mask mandates, but Patrick said that Hidalgo's order, specifically, amounted to "the ultimate government overreach." Hidalgo insisted she was only interested in conveying the seriousness of the situation. People would never follow recommendations as closely as orders, she said. Mandates would be far more effective. But Abbott seemed unpersuaded. He quickly issued yet another executive order, stating unequivocally that mask wearing was a matter of personal choice. (Abbott never responded to requests for comment for this article.) His resistance to tough restrictions aligned him with other Republican governors (in Florida and Arizona, for example) and with the president, whom he visited at the White House in early May, as reopening efforts across the country made headlines. The virus was far from under control in most of those states, but ailing economies were taking precedence over safety concerns.

Abbott accelerated the timeline for reopening the state when a Dallas-based hair stylist was sentenced to a week in jail for opening her salon in defiance of his shutdown, and two Republican state representatives followed her lead by getting their own haircuts. Abbott initially threatened to prosecute shop owners who violated his edict. But now, with a working mother in jail and his own party in partial revolt, he reversed course again, softening the penalties for such infractions and announcing that salons and barber shops could reopen on May 8 — 10 days earlier than planned. The move confused and frustrated other business owners: If salons and barber shops could open, why not tattoo parlors and bars?

It also inspired more citizens to take matters into their own hands. In mid-May, a handful of shops began reopening with the help of heavily armed militias who stood guard in an effort to discourage officials from interfering. As The New York Times reported, at least some of those protesters believed they were not technically violating the law, because the official order said only that people should avoid visiting such establishments, not that they had to remain closed.

Depti Giga, an intensive-care nurse, in the coronavirus unit's changing room at United Memorial Medical Center. Rahim Fortune for The New York Times

Shop owners were not the only ones confused. When The Houston Chronicle reported that the Harris County fire marshal and the Houston Fire Department had issued very few citations, despite receiving more than 12,000 complaints between mid-March and late May, a public fight ensued over who was responsible for enforcing occupancy limits and other strictures to which shop owners were technically bound. The fire authorities said that the mayor had not supported its early efforts to issue citations and that verbal warnings were working. The mayor said that the governor failed to back him up when business owners challenged the citations in court. And the Texas Alcoholic Beverage Commission, a state agency, said that it was generally relying on the local authorities to notify its officers of violations. "They are making decisions that impact people's lives and livelihoods and then asking us to carry out the orders, and they don't even have a clear plan as to what they are doing," Marty Lancton, the head of Houston's firefighters union, told me in late May.

By Memorial Day weekend, Texas was almost fully reopened. The state had not met its own criteria for keeping the coronavirus in check. No one seemed certain about whether or how to enforce the social-distancing edicts that remained. And, while Harris County's case counts had plateaued, case counts in other parts of the state were rising.

Public-health initiatives have always been vulnerable to both public resistance and political interference. Some of the nation's first public-health departments emerged as a response to exactly this problem. From the republic's earliest days it was clear that certain health threats could not be staved off by individuals acting alone. Elected officials also knew that when it came to protecting constituents from such threats, the wisest course of action was almost always the least politically popular one. Businesses had to be closed when plagues sneaked in on merchant ships. People and goods had to be quarantined and certain behaviors, like spitting in public, occasionally outlawed. Independent health committees were often created during public-health crises and authorized to act as needed so that the worst outcomes could be prevented — ideally without some politician having to lose his next election. In time, some of those committees morphed into permanent departments.

The autonomy of such departments was never total, of course. In the mid-1800s, even as American cities grappled with repeated cholera outbreaks, some officials balked at the expense of sanitation departments and municipal water systems, preferring instead to blame the poor for choosing to live in filth. And during the flu pandemic of 1918, public-health edicts were often subsumed by politics. The mayor of Pittsburgh, for example, ended a ban on public gatherings, not because the city was out of danger but because he had an election coming up and his constituents wanted to celebrate the Armistice with a parade. The city went on to suffer a spike in flu cases, even as the virus waned elsewhere.

In the 18th and early 19th centuries public-health statutes were created and enforced and sometimes even clamored for. "It's sort of a lost tradition," Parmet says. "If you ask a lawyer in the United States today, or if you asked them before Covid, what public-health police powers were, they might only vaguely recall having heard of it. But if you asked a lawyer in 1890, they'd cite entire treatises for you."

These powers were often employed cruelly; quarantines in particular were aimed at minorities who were considered dirty and disease-carrying by nature. During an 1892 typhus outbreak in New York City, for example, Russian Jews were rounded up — some of them literally pried from the arms of distraught family members, according to Howard Markel, a medical historian at the University of Michigan — and forcibly quarantined on an East River island downwind of the city garbage dump. It was commonly held at the time that Eastern European Jews carried typhus fever. Very few of those who were quarantined turned out to have typhus, but six ultimately died from illnesses related to unsanitary quarantine conditions. In 1900, when plague emerged in San Francisco, Asian residents were prevented by armed police battalions from leaving the city's Chinatown section, while European-Americans continued to come and go freely. And Black and brown Americans were often excluded from emerging public-health programs altogether, even as their bodies were used in experiments that advanced the science underpinning those very programs. In an effort to learn more about syphilis, for example, the U.S. Public Health Service withheld treatment from scores of syphilitic Black men in and around Tuskegee, Ala., lying to them about the nature of the study they were participating in and causing many to suffer and die from the disease long after a cure was available. And in the 1940s, in an effort to determine whether penicillin could prevent sexually transmitted infections, the U.S. Public Health Service experimented on prisoners, prostitutes, soldiers and mental patients in Guatemala, infecting them with sexually transmitted diseases without informing them or seeking their consent.

Supplies used in treating Covid-19 patients at United Memorial Medical Center in Houston. Rahim Fortune for The New York Times

If public-health police powers were eventually curbed it was not because of their racist application. In the decade or so after the Civil War, the business class brought a string of legal challenges to public-health laws — laws that required offal collectors to be licensed, for example, or that regulated certain slaughterhouse practices — claiming the statutes violated their constitutional rights under the newly passed 14th Amendment. The laws were frequently upheld, but the cases nonetheless charted a path for challenging restrictions.

In 1905, the Supreme Court upheld a Massachusetts law that fined individuals who refused to be vaccinated for smallpox. "Upon the principle of self-defense or paramount necessity," the court wrote, "a community has the right to protect itself from an epidemic of disease which threatens the safety of its members." Just a few months later, however, the same court sided with a New York baker who sued the state over a law restricting the number of hours his employees could work. Bakers' cellars were believed to be a hotbed of tuberculosis, and the state argued that restricted hours were essential to protecting employees' health and preventing disease outbreaks. But the court decided that a cap on hours did not qualify as a public-health intervention. "The two cases together were pivotal," Parmet says. "The court acknowledged that states had a right to restrict certain behaviors in the name of public health. But they refused to be expansive in their thinking about what public health actually was."

In the decades that followed, America passed through what scientists call the "epidemiological transition," which is to say that chronic diseases overtook infectious ones as the leading cause of death. Public health was a clear driver of that transition, but as infectious diseases receded and clinical medicine became more advanced, health itself became more personal than public. Population-level interventions lost whatever special credibility they had. "From there, we see growing libertarian rejection of public-health law and less and less exercise of public-health police powers," Parmet says. "Now we're in a once-in-a-century global pandemic, and everyone's scrambling to figure out what the state can and can't do to protect the public."

The Texas Health and Safety Code gives the local public-health authorities power to act in times of crisis to protect the community. But in May, Abbott suspended those powers, so that leaders like Hidalgo and Shah could not issue any rules that were stricter than those he issued. By then, just about all businesses were open at some level, and case counts were rising with alarming speed. Shah felt as though he were trapped in the driver's seat of a car with a stuck accelerator. "It's like we're shouting out the window, trying to tell everyone, 'Hey, this thing is out of control,'" he told me. "But we can't do anything to slow it down."

It wasn't just the bars and restaurants and movie theaters that worried him; it was the layering of so many other risks. There had been outdoor graduations, Mother's Day and Father's Day celebrations and Memorial Day weekend. There had also been a demonstration with thousands of protesters over of the murder of the Houston native George Floyd. Each event increased the virus's opportunity to spread. And each added to the forward momentum. "Every time we dial forward, the consequences of dialing back become greater," Shah said. "And so we keep dialing forward. And it builds on itself and creates this collective sense that: 'Hey, everything is OK. Everything is back to normal. We can go to the gym again.'"

Most Texans seemed to accept that social-distancing edicts, however painful, were their best hope of avoiding a far greater calamity. But many also resented the mixed messaging and seeming doublespeak that they detected from experts who were supposed to be impartial. When public-health officials came out in support of the George Floyd protests, some wondered why such a huge gathering was OK when a haircut hadn't been just two week earlier. Didn't people have to go to work, feed their children, pay their bills? Wasn't that also worth the risk? Shah and Hidalgo, who regularly meet to strategize on what measures to adopt and how, thought that haircuts and protests were both risky. They issued statements imploring protesters and shop owners alike to wear masks and maintain safe distances. But without the power or authority to do more, they were mostly hoping that people heard them at all and that they took the virus and the rising case count seriously.

Herman Thomas, a respiratory therapist at St. Joseph Medical Center in Houston, treating a patient on a proning bed. Rahim Fortune for The New York Times

Abbott initially dismissed the uptick in cases, saying that it was a result of more testing — a sign that things were going well — not a cause for alarm. Then he played down the cases, explaining that the uptick was confined to jails, meatpacking plants and nursing homes and therefore not a concern for the wider population. When it became clear that young adults were driving the surge, he admonished individual groups to take more personal responsibility for protecting themselves. On June 12, he told reporters that he was concerned but not alarmed. On June 17, he clarified his mask-ordinance ban, saying that county leaders could order businesses to order customers to cover their faces. But by then, mask wearing itself had become a cultural flash point, every bit as contentious as business closures and rapid reopenings.

America was a paradox — a beacon of science embedded in a culture increasingly suspicious of scientists — and Harris County reflected that paradox perfectly. Its cities were filled with medical and scientific riches, including a NASA space complex, an energy sector rife with engineers and the Texas Medical Center, the biggest health care complex in the world. But the doctors, scientists and engineers who populated those institutions lived right alongside one of the most vocal and effective anti-vaccination lobbies in the nation — more than 60,000 Texas families had obtained nonmedical vaccine exemptions in recent years, 25 times as many as 15 years ago.

Now that same lobby set itself against the coronavirus response. According to The Houston Chronicle, one group in particular, Texans for Vaccine Choice, was pressing the government to abandon its contact-tracing efforts over privacy concerns. "With so many Texans suffering financially, why are you spending $300 million on a temporary program aimed at alleviating this single outbreak that according to your own data is disappearing without any sort of surveilling intervention?" the group's members asked the governor.

There were other campaigns, too — insidious ones designed to spread misinformation about the health risks of masks, for example, on social media. Shah's team was trying to counter those efforts with a campaign of its own. Once it became clear that younger people were among the most affected by the surge, the communications and outreach director, Elizabeth Perez, shifted media strategies. When I spoke to her in early July, she was developing ads for TikTok and memes that adapted slogans and signs from the late 1980s and the 1990s — there was an MTV one and one based on "The Golden Girls" — into messages about collective responsibility and social distancing. The department was also still making hundreds of phone calls a day, pleading with shop owners, apartment complexes, nursing homes and places of faith to heed its advice.

The epidemiology team had been expanded to include hundreds of contact tracers and other new hires, but they struggled to stop the virus's spread, especially as the reopening continued. There was still not enough testing capacity to meet demand, and the wait time for results was still too long. For contact tracing to work, sources of infection need to be pinpointed as quickly as possible. "You can't trace without a case," as Shah is fond of saying. By mid-June, Hidalgo worried that the virus had outrun their best efforts. "We're throwing everything we have at it," Hidalgo told me. "And we have no evidence right now that any of our strategies are working." The leveling out of cases that Shah and his team managed to achieve — the plateau — was gone. New case counts were up to 200 a day and, given the testing shortage, the actual number of cases was probably much higher than that.

Shah felt as if he and his staff had not had a day off since March. When he expressed guilt over clocking just six hours one Saturday, someone had to remind him what normal workweeks looked like. His 6-year-old son had stopped asking him to play. "He used to ask every time I walked in the door," Shah told me in June. "I'd say yes, but then I'd be on my cellphone or laptop half the time. And he noticed that, and now he doesn't ask anymore." What was that lost time worth, Shah wondered, if the message he and his team were trying to deliver never got through? If the virus kept winning?

Diego Montelongo, a medical intern, with a patient at United Memorial Medical Center in Houston. Rahim Fortune for The New York Times

Many experts agree that lockdowns to stop the coronavirus from spreading could have been safely lifted, in a targeted way, based on careful localized assessments and close monitoring. Restrictions would be reintroduced as needed — potentially several times in the next few years — until either a vaccine was made available or 70 to 80 percent of the population developed immunity to SARS-CoV-2. Numerous papers have laid out a range of potential models for creating this system. But even the least ambitious of these plans requires more coordination and consensus than the nation's leaders have mustered at any point in the past several months — and a more robust and empowered public-health apparatus than the United States has had in a generation.

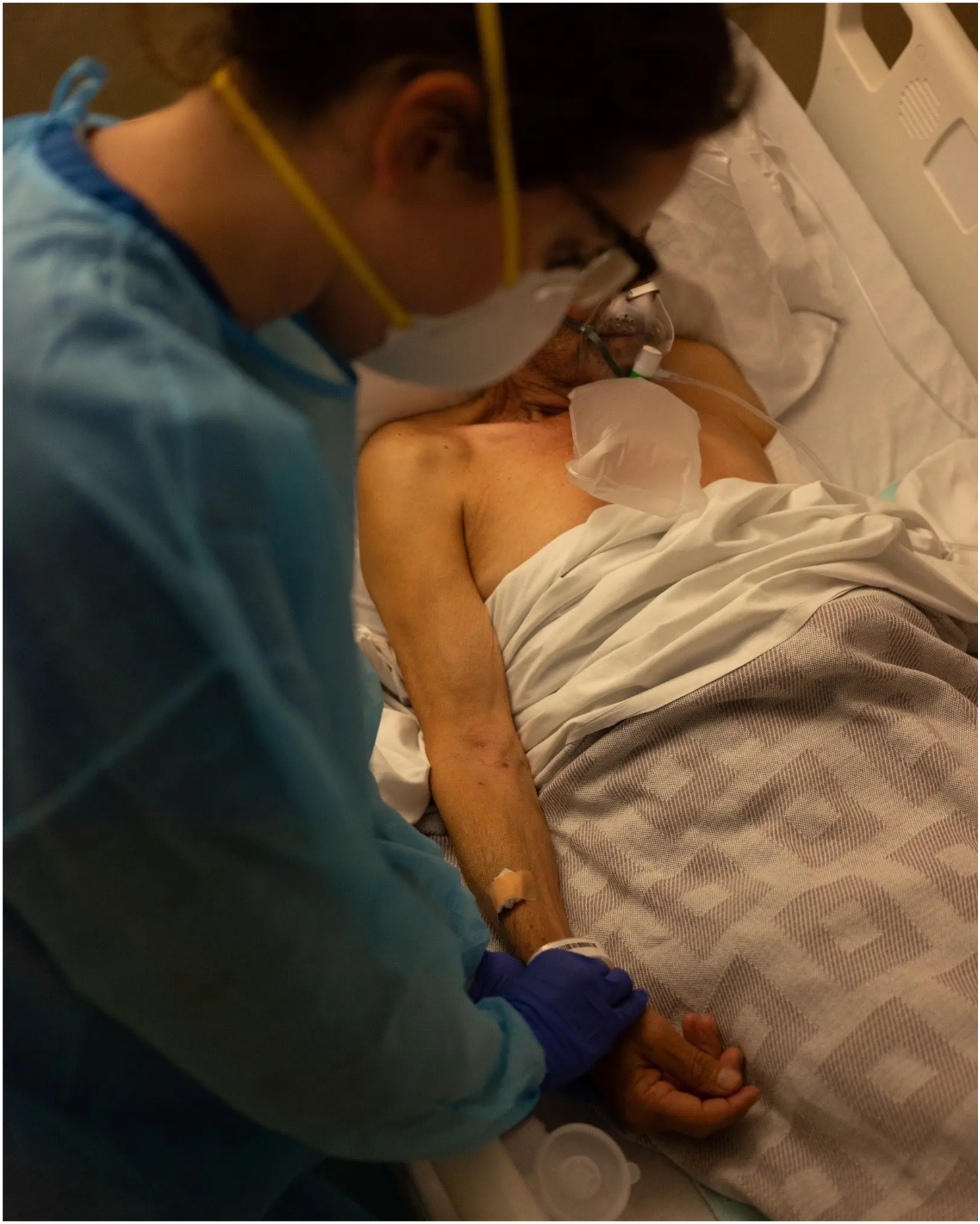
There is no shortage of possible solutions to the problems plaguing the nation's public-health apparatus. The Association of Public Health Laboratories has been working since long before the current contagion to modernize the nation's disease-surveillance system so that health officials can track and respond to disease outbreaks, both infectious and chronic, before they mushroom into epidemics. "The system we have now is dangerously antiquated and not nearly as effective as it could be or should be," Scott Becker, the association's chief executive, told me.

Becker and others are also pressing for the federal government to expand and fortify the nation's public-health laboratories, which have been overwhelmed by the pandemic. And other public-health advocates are arguing that the C.D.C. should be empowered to issue and enforce actual rules, as opposed to issuing mere guidelines, even if that requires a change in law and custom. "In other countries, public-health agencies have a command-and-control structure where they can compel lower entities to collect and share data," Hearne told me. "And then, during a crisis, those agencies can step in and make actual decisions. It's high time the C.D.C. move in that direction."

But almost every expert I spoke with, regardless of which individual facet of reform they were championing, agreed that something much more fundamental would also have to change. The coronavirus pandemic has laid bare gnawing questions at the core of America's many divisions: Are we willing to trust science and scientists in a crisis? What, exactly, do we want from our government? And what are we willing to sacrifice for one another? A recent poll by the Kaiser Family Foundation found that a majority of Americans, in both political parties, favor strict social-distancing edicts and other tight measures to control viral spread. And initially at least, mutual-aid societies, whose citizen volunteers provide a range of support services to those hit particularly hard by the virus, were as pervasive as anti-mask and anti-shutdown protests, if not more so.

Yet the anti-mask set is hard to ignore, in part because it speaks to a broader current of American life. "People have grown comfortable putting their individual rights ahead of the needs of their community," David Persse, who serves as one of Houston's top health officials, told me in April. Persse, who is 61, remembers contracting measles as a child and seeing at least one classmate debilitated by polio. "It's a public-health success that hardly anyone even remembers those times," he said. "It means we mostly defeated those pathogens before most of the people now living were even born. But that success has become a burden, because if nobody remembers, then nobody understands what we're trying to protect them from."

While pandemics have a way of jogging our memories, any gains tend to be short-lived. After the anthrax mailings of 2001, the SARS outbreak of 2003 and the swine flu outbreak of 2009, some health departments say they were so flooded with money that absorbing it became a challenge. But that investment dried up quickly once the immediate threat faded. A common complaint among public-health workers is that this "neglect, panic, repeat" cycle makes it impossible to prevent crises instead of merely responding to them.



Deanna Sharp, a registered nurse, caring for a Covid-19 patient at St. Joseph Medical Center in Houston. Rahim Fortune for The New York Times

Health departments across the country have seen their budgets shrink by nearly 30 percent since 2008. As a result, they have had to cut 56,000 jobs (nearly 23 percent of the total public-health work force) and to make do without a roster of operational essentials, including modern laboratory equipment, modern computer systems and routine pandemic preparedness drills. The C.D.C. budget has remained flat over the same period, relative to inflation, and the White House recently eliminated a directive aimed specifically at pandemic preparedness, a move that was widely noted and denounced as SARS-CoV-2 reached pandemic proportions. Efforts to modernize data-surveillance systems or expand lab capacity have been anemic at best, and federal funding for programs aimed at chronic-disease prevention has never been sufficient. Experts say the lack of sufficient funding has directly exacerbated the current crisis, because diabetes and other chronic medical conditions increase our susceptibility to Covid-19.

As 2020 wears on, Shah and others are grappling with a new and bitter reality: Because of the economic crisis, which was triggered by the current pandemic, which was worsened by a lack of public-health investment, public-health agencies will probably suffer more budget cuts in the coming years. "It's not like the environmental movement or even the health care reform movement, where you have activists and lobbyists and advocates fighting to change the status quo or to secure their piece of the pie," Hearne told me. "It's a lot of isolated departments across the country, saying, 'Oh, we'll just keep doing God's work over here, and if our budget gets cut again, we'll just make do somehow.'"

To change this, Shah, Hearne and others say, the public-health community will need to muster more political will than it has in the past. In the years preceding the coronavirus outbreak, the United States faced a host of public-health disasters: a resurgence of measles and syphilis; an uptick in food-borne illness; and a continuing lead-contaminated-water crisis. None of those issues captured even a fraction of the attention that universal health care did. In fact, while the health care system was discussed relentlessly in 2019, as it tends to be almost every election season, public health was barely mentioned at all. "No one is going to vote for you or name a hospital wing after you because you kept them from getting something that they didn't think they were susceptible to in the first place," Frieden says. "The people who cure diseases are glorified, not the people who prevent them."

In late June, Abbott reversed course again and ordered the state's bars to close and restaurants to reduce their capacity to 50 percent (they had been at 75 percent for several days). He also issued an executive order requiring all Texans in counties with more than 20 active Covid-19 cases to wear a mask in public. Scientists worried that it was too little too late, and by early July, the numbers seemed to prove them right. On July 8, the state hit a record 9,952 new coronavirus cases reported in a single day. The state's positivity rate — the portion of all tests done that come out positive — also rose to 15.6 percent, from 7.9 percent just three weeks earlier.

Hospital beds were filling up, hospital floors reconfigured and surge units readied. Doctors and nurses, in Harris County and elsewhere, have begun a worrying and familiar census-taking of ventilators and personal protective equipment. And the same stories that played out in Wuhan and Lombardy and Seattle and New York were beginning anew. And not only in Texas. In more than 35 states, including some that had previously brought their outbreaks under control, daily case counts are rising, positivity rates are rising and new grim records are being set — and then quickly surpassed. People in Texas, Florida, California and New Jersey are bracing for a second wave of outbreaks in the fall, even as the first wave has yet to fully recede. The root of this catastrophe, doctors, scientists and health historians say, is our failure to fully incorporate public health into our understanding of what it means to be a functioning society. Until we do that, we will be unable to effectively respond to crises like this one — let alone prevent them.

In Harris County, Hidalgo and her advisers have created a numerical and color-coded warning system so that residents know how dire the threat level is and exactly how cautious they need to be. "We needed something that was clear and concise, because the back and forth with all the orders was confusing people and causing them to tune out," she told me. "I went with colors and numbers because some people like one and some people like the other, and I really just want this to stick." Right now, Harris County is at the highest threat level: one (or red), meaning that the outbreak there is severe and uncontrolled and that people should leave home only to meet essential needs. As with all things coronavirus-related, it will take a while to see if people hear the message and heed it.

In the meantime, the political and cultural battles over how to respond to the coronavirus crisis have continued unabated. The Texas Education Agency said they would withhold funding for schools that don't enable students to attend full-time, in-person, this fall. On July 8, the mayor of Houston, Sylvester Turner, prevailed on the city's convention center to cancel the state Republican convention that was scheduled for mid-July. The state party has challenged the move in court.