The C.D.C. Waited ‘Its Entire Existence for This Moment.’ What Went Wrong?

The technology was old, the data poor, the bureaucracy slow, the guidance confusing, the administration not in agreement. The coronavirus shook the world’s premier health agency, creating a loss of confidence and hampering the U.S. response to the crisis.

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Coronavirus patients on ventilators at Elmhurst Hospital in Queens, N.Y., last month.Erin Schaff/The New York Times

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WASHINGTON — Americans returning from China landed at U.S. airports by the thousands in early February, potential carriers of a deadly virus who had been diverted to a handful of cities for screening by the Centers for Disease Control and Prevention.

Their arrival prompted a frantic scramble by local and state officials to press the travelers to self-quarantine, and to monitor whether anyone fell ill. It was one of the earliest tests of whether the public health system in the United States could contain the contagion.

But the effort was frustrated as the C.D.C.'s decades-old notification system delivered information collected at the airports that was riddled with duplicative records, bad phone numbers and incomplete addresses. For weeks, officials tried to track passengers using lists sent by the C.D.C., scouring information about each flight in separate spreadsheets.

"It was insane," said Dr. Sharon Balter, a director at the Los Angeles County Department of Public Health. When the system went offline in mid-February, briefly halting the flow of passenger data, local officials listened in disbelief on a conference call as the C.D.C. responded to the possibility that infected travelers might slip away.

"Just let them go," two of the health officials recall being told.

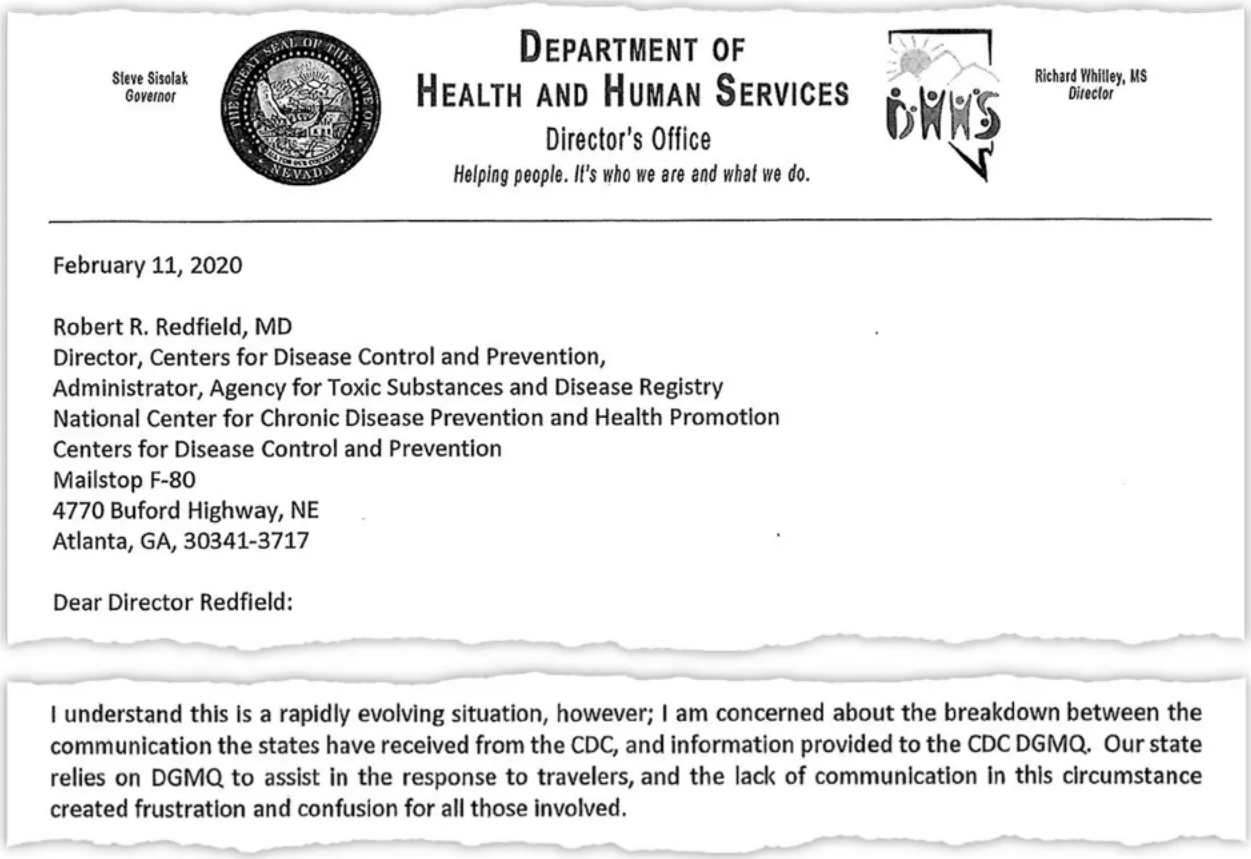
The flawed effort was an early revelation for some health departments, whose confidence in the C.D.C. was shaken as it confronted the most urgent

public health emergency in its 74-year history — a pathogen that has penetrated much of the nation, killing more than 100,000 people.

The C.D.C., long considered the world's premier health agency, made early testing mistakes that contributed to a cascade of problems that persist today as the country tries to reopen. It failed to provide timely counts of infections and deaths, hindered by aging technology and a fractured public health reporting system. And it hesitated in absorbing the lessons of other countries, including the perils of silent carriers spreading the infection.

The agency struggled to calibrate its own imperative to be cautious and the need to move fast as the coronavirus ravaged the country, according to a review of thousands of emails and interviews with more than 100 state and federal officials, public health experts, C.D.C. employees and medical workers. In communicating to the public, its leadership was barely visible, its stream of guidance was often slow and its messages were sometimes confusing, sowing mistrust.

"They let us down," said Dr. Stephane Otmezguine, an anesthesiologist who treated coronavirus patients in Fort Lauderdale, Fla. Richard Whitley, the top health official in Nevada, wrote to the C.D.C. director about a communication "breakdown" between the states and the agency. Gov. J.B. Pritzker of Illinois lashed out at the agency over testing, saying that the government's response would "go down in history as a profound failure."



Steve Sisolak
Governor

DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Director's Office
Helping people. It's who we are and what we do.

Richard Whitley, MS
Director

February 11, 2020

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Dear Director Redfield:

I understand this is a rapidly evolving situation, however; I am concerned about the breakdown between the communication the states have received from the CDC, and information provided to the CDC DGMQ. Our state relies on DGMQ to assist in the response to travelers, and the lack of communication in this circumstance created frustration and confusion for all those involved.

A letter sent by Nevada's top health official to the C.D.C. director, expressing concern about communication.

"The C.D.C. is no longer the reliable go-to place," said Dr. Ashish Jha, the director of the Harvard Global Health Institute.

Even as the virus tested the C.D.C.'s capacity to respond, the agency and its director, Dr. Robert R. Redfield, faced unprecedented challenges from President Trump, who repeatedly wished away the pandemic. His efforts to seize the spotlight from the public health agency reflected the broader patterns of his erratic presidency: public condemnations on Twitter, a tendency to dismiss findings from scientists, inconsistent policy or decision-making and a suspicion that the "deep state" inside the government is working to force him out of office.

Mr. Trump and his top aides have grown increasingly bitter about perceived leaks from the C.D.C. they say were designed to embarrass the president and to build support for decisions that ignore broader concerns about the country's vast social and economic dislocation. At the same time, some at

the C.D.C. have bristled at what they see as pressure to bend evidence-based recommendations to help Mr. Trump's political standing.

Located in Atlanta, the C.D.C. is encharged with protecting the nation against public health threats — from anthrax to obesity — and serving as the unassailable source of information about fighting them. Given its record and resources, the agency might have become the undisputed leader in the global fight against the virus.

Instead, the C.D.C. made missteps that undermined America's response.

"Here is an agency that has been waiting its entire existence for this moment," said Dr. Peter Lurie, a former associate commissioner at the Food and Drug Administration who for years worked closely with the C.D.C. "And then they flub it. It is very sad. That is what they were set up to do."

The agency's allies say it is just one part of a vast network of state and local health departments, hospitals, government agencies and suppliers that were collectively unprepared for the speed, scope and ferocity of the pandemic. They also point out that lawmakers have long failed to adequately prioritize funding for the kind of crisis the country now faces.

Dr. Amy Ray, an infectious disease specialist in Cleveland, said the C.D.C. did not "get enough credit," adding, "They are learning at the same time the world is learning, by watching how this disease manifests."

The agency, which declined repeated requests for interviews with its top officials, said in a statement: "C.D.C. is at the table as part of the larger U.S. government response, providing the best, most current data and scientific understanding we have."

"It's important to remember that this is a global emergency — and it's impacting the entire U.S.," the agency said. "That means it requires an all-of-government response."

‘Not Our Culture to Intervene’

In early March, Dr. Redfield led Mr. Trump on a V.I.P. tour of the high-tech labs at the C.D.C.’s Atlanta headquarters, standing off to the side as the president spoke.

Wearing a red “Keep America Great” cap, Mr. Trump falsely asserted that “anybody that wants a test can get a test,” claimed he had a “natural ability” for science and noted that he might hold campaign rallies even as the virus spread.

“Thank you for your decisive leadership in helping us, you know, put public health first,” Dr. Redfield told the president as they posed for the cameras.

The moment underscored the challenge for the director and his agency. To combat the virus, he would have to manage the mercurial demands of the president who appointed him and the expectations of the career scientists he leads.

The sensibilities could not be more different. At one point that month, administration officials asked the agency to provide feedback on possible logos — including “Make America Healthy Again” — for cloth face masks they hoped to distribute to millions of Americans. The plan fell through, but not before C.D.C. leaders agreed to the request, according to one person familiar with the discussions.

White House aides saw Dr. Redfield, 68, as an ally, but as the coronavirus crisis intensified, his meandering manner in television appearances and congressional hearings irritated a president drawn to big personalities and assertive defenders of his administration.

A former military virologist who specialized in H.I.V., Dr. Redfield was Mr. Trump’s second choice after his first C.D.C. director resigned. He had no experience leading a government agency — though he had been considered

for jobs in previous Republican administrations — and often told associates that he was happiest treating patients in Africa or Haiti.

Dr. Robert C. Gallo, who founded the Institute of Human Virology at the University of Maryland School of Medicine with Dr. Redfield in 1996, said he had warned him against taking the C.D.C. post, describing it as "massive public health, lots of politics, lots of pressure."

While praising his friend as "a terrific, dedicated infectious disease doctor," Dr. Gallo, who also co-founded the Global Virus Network, said in an interview that Dr. Redfield "can't do anything communication-wise." He added, "He's reticent, never wanting the front of anything — maybe it's extreme humility."

The C.D.C., established in the 1940s to control malaria in the South, has the feel of an academic institution. There, experts work "at the speed of science — you take time doing it," said Dr. Georges C. Benjamin, executive director of the American Public Health Association.

The agency, a division of the Department of Health and Human Services with 11,000 employees, cannot make policy, but it guides federal and state public health systems and advises government leaders.

The C.D.C.'s most fabled experts are the disease detectives of its Epidemic Intelligence Service, rapid responders who investigate outbreaks. But more broadly, according to current and former employees and others who worked closely with the agency, the C.D.C. is risk-averse, perfectionist and ill suited to improvising in a quickly evolving crisis — particularly one that shuts down the country and paralyzes the economy.

"It's not our culture to intervene," said Dr. George Schmid, who worked at the agency off and on for nearly four decades. He described it as increasingly bureaucratic, weighed down by "indescribable, burdensome hierarchy."

The exacting culture shaped its scientists' ambitions; it also locked some

into a fixed way of thinking, former officials said. And it helped produce the C.D.C.'s most consequential failure in the crisis: its inability early on to provide state laboratories around the country with an effective diagnostic test.

The C.D.C. quickly developed a successful test in January designed to be highly precise, but it was more complicated to use and turned out to be no better than versions produced overseas. And in manufacturing test kits to send to the states, the C.D.C. contaminated many of them through sloppy lab practices. That, along with the administration's failure to quickly ramp up commercial and academic labs, delayed the rollout of tests and limited their availability for months.

In late January, the agency sent epidemiologists to Seattle to help local health officials learn whether what was then the country's first known patient — a 35-year-old man who had visited Wuhan, China — had infected others.

After an initial round of tests, the agency imposed restrictive testing standards. When doctors in Washington State and elsewhere forwarded the names of about 650 people in January who might have been infected — they had contact with a confirmed patient, had been admitted to a hospital or had other risk factors — the C.D.C. agreed to test only 256. That group consisted primarily of people traveling from Wuhan and their contacts.

In part because of capacity issues, the agency typically did not recommend testing people without symptoms — even though Chinese doctors were reporting that people could spread the virus without ever feeling ill. Dr. Redfield mentioned the possibility of asymptomatic spread in a CNN interview in February, but the C.D.C. did not emphasize such transmission until late March.

In mid-February, C.D.C. officials announced plans for a national surveillance effort — by testing samples from people with flulike symptoms — to determine whether the virus was spreading undetected. The effort was to

begin in Seattle, New York and three other cities, but after disagreements over how to proceed, it did not start.

Later that month, public health officials across the country were increasingly concerned about visitors streaming into the United States from South Korea, Japan, Italy and other European countries engulfed by the virus.

On phone calls with the C.D.C., worried state officials kept asking: "Are there plans to expand the travel monitoring?" The response, according to a participant from New York, was always the same: "We're still actively considering that."

Mr. Trump announced a European travel ban on March 11, a few days after meeting with Dr. Redfield and others. But it was too late. Genomic tracing would later show that European travelers had brought the virus into New York as early as mid-February; it multiplied there and elsewhere in the country. In Seattle, a strain from China had struck nursing homes in late February.

"If we were able to test early, we would have recognized earlier" the scale of the outbreak, said Dr. Jeffrey Duchin, the chief health officer in King County, Wash. "We would have been able to put prevention measures in place earlier and had fewer cases."

Part of the C.D.C.'s start-up troubles, current and former employees said, was that the group in charge of the response initially — the Division of Viral Diseases — is smaller and has far less staff focused on contagious respiratory diseases than the C.D.C.'s Influenza Division, which eventually took a more leading role. "They were very quickly overwhelmed by what they had to do," said Dr. Pierre Rollin, a virologist who left last year.

Now, more than 3,000 C.D.C. employees are aiding the coronavirus response, analyzing data, performing lab work and deploying to cities where local health departments need help. While other federal agencies are also

involved — including the F.D.A., which has speeded the use of antibody tests; the Federal Emergency Management Agency, which has worked to get ventilators and other supplies; and the National Institutes of Health, which has studied vaccines and possible treatments — the C.D.C. is the reigning expert.

Even before the current crisis, Dr. Redfield had kept a low profile. Some days he could be spotted in a corner of the cafeteria, sipping coffee alone.

Although he is on the White House coronavirus task force, Dr. Redfield found himself eclipsed by Dr. Anthony S. Fauci, the nation's most famous infectious disease specialist, and Dr. Deborah Birx, an AIDS expert and former C.D.C. physician.

Meanwhile, his bonds with some of his own staff have frayed. One associate recounted him saying that the agency's scientists had a "myopic" view of their roles, and characterized his relationship with his top deputy, Dr. Anne Schuchat, a career C.D.C. scientist deeply respected in the agency, as growing strained.

He has not been in Atlanta recently, shuttling instead between his home in Baltimore and the West Wing. One person familiar with his thinking described Dr. Redfield as feeling "a little bit on an island."

The C.D.C. still has many defenders who say it has done the best it could battling a stealthy, previously unknown virus. "When they do release something, it does what C.D.C. ought to do — retain the voice of credibility," said Dr. James A. Town, medical director of the intensive care unit at Harborview Medical Center in Seattle. "Even if it's coming at a slower pace, which can be frustrating, I think they're pretty thoughtful and trying to make even-keeled investigations."

Dr. Redfield declined to comment for this article. But in a recent interview with The Hill, he said, "I would say C.D.C. has never been stronger."

In a briefing last week, he acknowledged that the nation must work to improve its systems to track disease outbreaks, though he disputed that the agency was somehow unable to detect when the coronavirus started to spread in the United States. “We were never really blind to the introduction of this virus,” he said.

The Data Pipeline

Inside Building 21, the C.D.C.’s gleaming 12-story headquarters, nothing has been more critical than getting fast, accurate information on how the virus is spreading, who is getting sick, how best to treat them and how quickly the country can reopen.

But that has proved difficult for the agency’s antiquated data systems, many of which rely on information assembled by or shared with local health officials through phone calls, faxes and thousands of spreadsheets attached to emails. The data is not integrated, comprehensive or robust enough, with some exceptions, to depend on in real time.

The C.D.C. could not produce accurate counts of how many people were being tested, compile complete demographic information on confirmed cases or even keep timely tallies of deaths.

The result is an agency that had blind spots at just the wrong moment, limited in its ability to gather and process information about the pathogen or share it with those who needed it most: front-line medical workers, government health officials and policymakers.

“That specific, granular data has huge implications,” said Julie Fischer, a professor of microbiology at Georgetown University who studies community preparedness for emerging diseases. “We lost precious time in decision-making and putting public health resources to use.”

When C.D.C. officials urged states to track travelers from China in February

for possible infection, the agency turned to a computer network called Epi-X. It sent emails to state officials, one at a time, for each arriving flight so they could download a list of targeted passengers.

In California, state health officers received as many as 146 notification emails a day, forcing them to spend time forwarding them to the appropriate local health departments. In some cases, the information, collected for the C.D.C. by the Department of Homeland Security, listed incorrect dates or times; in other cases, passenger data was sent to the wrong state or came more than a week after the travelers had entered the United States.

"We got crappy data," said Fran Phillips, Maryland's deputy health secretary. "We would call them up and people would say, 'Well, I was in China, but that was three years ago.'"

On Feb. 11, Mr. Whitley, Nevada's top health official, complained to Dr. Redfield in a letter about "the breakdown" in "communication the states have received from the C.D.C." The agency had said three travelers from China could "go along with their normal day-to-day business" — advice that conflicted with the C.D.C.'s message to monitor such passengers and make sure they were in self-quarantine.

One week later, the C.D.C.'s Epi-X system stopped sending notices entirely, even though flights kept coming. The agency had temporarily shut the system down to "improve data quality," it told state officials in an email.

The travel-monitoring program screened at least 268,000 passengers through mid-April. A C.D.C. report cited 14 Covid cases that were traced back to those passengers, but lapses and errors in the data made that tally far from conclusive. The agency went on to say that the program did not stop the disease from being introduced to California, where incomplete information, high travel volume and the possibility of asymptomatic spread made it ineffective.

Once coronavirus cases started developing in earnest in the United States in March, federal and state officials began demanding information to make key decisions. Among them: where to move ventilators from the national stockpile and where to build temporary hospitals.

State and local officials were quickly overwhelmed trying to document hospitals' needs. Staff at the Los Angeles County Public Health Department, for example, called each of the 94 county hospitals in the early weeks of the outbreak, asking nurses how many coronavirus patients were in intensive care units and how many were on ventilators.

The C.D.C. tried to repurpose one of its data systems to collect the information directly from hospitals, but it had significant gaps. Finally, the Department of Health and Human Services in April also enlisted a private contractor, TeleTracking Technologies, only to have hospitals struggle to log on to the system.

Hospital executives resorted to finding aid themselves. Scott Malaney, head of Blanchard Valley Health System in Ohio, got a phone call from an official at a Michigan health care system that was running short on beds and equipment. It was asking neighboring facilities to share supplies or take in overflow patients if necessary.

"She said they were looking up the phone book up and down Highway 75 to see if there were other places that could help," Mr. Malaney recalled.

The disconnects in the public health record-keeping system delayed sharing critical data that could help patients, said Dr. Thomas Inglesby, director of the Center for Health Security at the Johns Hopkins Bloomberg School of Public Health.

Hospitals look to the C.D.C. for that information. "Is it higher risk to be a healthy person at age 75 with coronavirus or a diabetic with the disease at age 45?" Dr. Inglesby said. "We should have the data to know the answer to

this question quickly, and we should be using it to make better decisions."

As the number of suspected cases — and deaths — mounted, the C.D.C. struggled to record them accurately. The agency rushed to hire extra workers to process incoming emails from hospitals. Still, many officials turned to Johns Hopkins University, which became the primary source for up-to-date counts. Even the White House cited its numbers instead of the C.D.C.'s lagging tallies.

Some staff members were mortified when a Seattle teenager managed to compile coronavirus data faster than the agency itself, creating a website that attracted millions of daily visitors. "If a high schooler can do it, someone at C.D.C. should be able to do it," said one longtime employee.

For years, federal and state governments have not invested enough money to insure that the nation's public health system would have critical data needed to respond in a pandemic. Since 2010, for example, grants to help hospitals and states prepare for emergencies have declined.

In 2019, more than 100 public health groups pressed congressional leaders to allocate $1 billion over a decade to upgrade the infrastructure. The C.D.C. received $50 million toward the effort this year. Then, as coronavirus cases and deaths mounted in March, the federal government committed to $500 million under the emergency CARES Act.

"The crisis has highlighted the need to continue efforts to modernize the public health data systems that C.D.C. and states rely on," Dr. Redfield told a Senate committee on May 12. "Timely and accurate data are essential as C.D.C. and the nation work to understand the impact of Covid-19 on all Americans."

Data is one of the essential tools of public health; Mr. Trump, though, often appears to see it as a weapon against him. He has suggested that testing is "overrated" and that it makes the United States look bad by increasing the

number of confirmed cases. He has seized on lower-end projections of the virus's toll, only to see them eclipsed as the cases and deaths rose.

Recently, the C.D.C. drew criticism after media reports disclosed that in tracking how many Americans had been tested, the agency had breached standard practice by combining data from antibody tests, which can indicate past infections, with diagnostic tests. The agency said it was caused by confusion in overworked state and local health officials reporting results, but the mistake muddied the picture of the pandemic.

"The scientists at the C.D.C. are still great," Dr. Jha said. "It's very puzzling to all of us why C.D.C. performance has been so poor."

A Strained Relationship

Late in the evening on March 15, the C.D.C. put a bold statement on its website: All gatherings of more than 50 people should be canceled, the agency said, effectively calling for an end to large public events.

Inside the West Wing, the president's top aides were stunned. Meeting in the Situation Room, the coronavirus task force was just putting the finishing touches on its own guidance. It limited gatherings to no more than 10 people — a fact that C.D.C. officials, including Dr. Redfield, knew from participating in days of debate on the issue.

The Coronavirus Pandemic: Key Things to Know

Vaccines and boosters. Although new federal data suggests that the effectiveness of booster shots wanes after about four months, the Biden administration is not planning to recommend fourth doses of the coronavirus vaccine anytime soon.

Reporters soon were peppering the White House with questions about whether it was overruling the C.D.C. Some of Mr. Trump's aides shrugged it

off as a miscommunication. But others viewed it as the C.D.C. insisting it knew best.

The episode underscored the strained relationship between the health agency and the White House. Veteran officials at the C.D.C. were not unfamiliar with the ways of Washington. But they had never dealt with a president like Mr. Trump or a White House like his.

Already under siege for problems with the agency's diagnostic test, C.D.C. officials watched with growing alarm as Mr. Trump, facing criticism for his administration's response, repeatedly undermined the agency.

Though the task force was occasionally ahead of the C.D.C. in its cautions to the public, Mr. Trump and his aides often expressed extraordinary skepticism about the coronavirus and the steps required to combat it. He said the virus would disappear "like a miracle" even as C.D.C. scientists described it as a real threat. When the C.D.C. urged Americans to wear masks, he said, "I don't see it for myself."

And when Dr. Redfield told The Washington Post that a second wave of the virus could be "even more difficult" than the first, Mr. Trump insisted that he publicly claim to have been misquoted during a White House briefing. Dr. Redfield, with the president standing next to him, scowling, said he had been misunderstood.

At one point, Mr. Trump even complained about the agency to his 80 million Twitter followers, saying, "For decades the @CDCgov looked at, and studied, its testing system, but did nothing about it."

"There comes a time," said Dr. Jeffrey Koplan, who served as C.D.C. director in the Clinton and Bush administrations, "when it makes it very hard to operate effectively, when things are being suggested, requested, ordered that you think are contrary to the containment of the pandemic."

The president and his aides viewed the civil servants at the C.D.C. — many of whom had worked under presidents from both parties — as disloyal liberals eager to wound Mr. Trump politically by leaking to the press. In private, some senior administration officials began referring to agency scientists as members of the "deep state," according to several people who participated in the conversations but requested anonymity to discuss the meetings.

As the crisis deepened, tensions between Washington and Atlanta increased.

In late February, Dr. Nancy Messonnier, who oversees the C.D.C.'s respiratory diseases center and had been leading the agency's emergency response, was sidelined after she issued a stark public warning that the virus would disrupt American lives. The comments sent stocks tumbling and infuriated Mr. Trump, who had not been told in advance. Public health officials, inside and outside the agency, saw her forced retreat as an effort to silence the truth.

Often, the clashes have centered on the economic consequences of shutdowns, which have forced 40 million people into unemployment, companies into bankruptcy and fueled resentment across the country.

In early April, the C.D.C. posted an extension of its "no sail" order for cruise ships, forbidding them from operating through August and warning that the ban could become indefinite. The White House had supported the original order, but privately objected to an indefinite ban, fearing lasting harm to an industry that employs tens of thousands of people.

The posting quickly came down, replaced by an order ending the ban in July. "Those things aren't helpful," Dr. Redfield would tell his colleagues when disputes between the C.D.C. and the task force erupted.

The White House was soon put on the defensive when USA Today cited internal emails about the pressure. "Sorry to do this, but the Office of the

Vice President has instructed us to pull the No Sail Order Extension from the website immediately," the paper quoted a C.D.C. official as writing to agency colleagues.

To the president's aides, one of the most frustrating moments came on May 1, when Dr. Schuchat published one of the agency's regular reports on morbidity and mortality without giving the White House any notice, according to two of Mr. Trump's advisers.

Written in dry, scientific language, the report offered a blunt assessment of the virus's spread, showing how travel from Europe and mass gatherings had accelerated it. Dr. Schuchat went further when interviewed for an Associated Press article — "Health Official Says U.S. Missed Some Chances to Slow Virus" — saying that "taking action earlier could have delayed further amplification."

As the president pushed governors to "liberate" their states from virus lockdowns, top C.D.C. officials in April delivered a draft of new guidance full of caveats about lifting the restrictions. In it, the agency urged schools, churches, child care centers, day camps, restaurants and bars to take numerous precautions and move slowly.

Trump aides were furious when they saw the draft. To them, it was more evidence that the C.D.C. refused to consider political, economic and social effects in weighing how and when to reopen the country. The agency's recommendations for houses of worship particularly annoyed some aides, who resisted the advice that churches stop giving communion.

When the White House sat on the draft guidance for weeks, a copy was leaked.

While the C.D.C. delayed posting the draft guidance that would allow churches to reopen, Mr. Trump all but ordered it to do so. During a visit to Michigan on May 21, the president — who the next day would explain, "In

America, we need more prayer, not less" — made it clear the C.D.C. no longer had any choice.

"I said, 'You better put it out,'" Mr. Trump told reporters. "And they're doing it."

A suggestion in the guidance that houses of worship "consider suspending" the use of choirs and congregant singing because it "may contribute to transmission" was removed. Two federal officials said it had not been cleared by the White House.

Lawrence Gostin, the director of a legal center at the World Health Organization, and a former C.D.C. official, chided the White House for exerting undue pressure on the C.D.C. throughout the crisis.

"Public health is politics. But this is different," he said. "It's criticizing its public health agencies in public. It's rejecting guidelines it puts out. It tells them you can't even put guidelines out."

"I would expect the C.D.C. to coordinate with the White House," he added. "But this is not team work. This is not coordination. This is confrontation."

Where's the Guidance?

As the battle against the coronavirus stretches into summer and the United States lurches toward restarting its economy, the mayor of Miami Beach wants to know what to do if Covid-19 cases explode after the city's famous beaches open again.

Doctors and nurses remain desperate for updates on how to protect themselves. School superintendents and college presidents need to decide how to hold classes in the fall. And employers want advice about whether to test all of their workers before returning to business as usual.

The C.D.C. is where they expect to get answers. As the national

clearinghouse for critical public health information, it has dual missions: to provide medical guidance to health workers while offering easy-to-understand information for political leaders, business executives and the general public.

But many say the agency has struggled at times to provide clear and timely guidance.

At Margaret Mary Community Hospital in rural Batesville, Ind., doctors and nurses got sick after following C.D.C. guidance in mid-March that masks were necessary only when treating patients with respiratory symptoms or fever. The first patients who tested positive for Covid-19 there instead showed up with headaches, fatigue, nausea and diarrhea.

"This virus made it halfway around the world without us having a heads-up to our providers that this is how the disease can present," said Tim Putnam, the hospital's chief executive. "Over two months after the disease surfaced, I would have expected better."

Front-line doctors and nurses have long relied on the agency for advice on clinical best practices, and many said in interviews that they were satisfied with the C.D.C.'s advisories, especially given the novelty of the coronavirus.

The agency has issued 114 advisory documents for disaster and homeless shelters, retirement communities, taxis, pediatric clinics and other venues. "We have issued countless guidance and recommendations based on the best available science and data," an agency press officer said. Its experts have also held about a dozen calls for clinicians about caring for Covid patients, and other calls for medical groups.

But in interviews with medical practitioners across the country, many said they now look elsewhere for detailed recommendations about how to safely care for infected patients, posing questions about the new virus on mailing lists or scouring online research articles.

In a crisis, one of the C.D.C.'s main roles is to explain its guidance and reasoning, provide a rationale for when its thinking changes and acknowledge what it does not know. The agency's routine in past emergencies was to hold press briefings almost daily; Dr. Thomas Frieden, Dr. Redfield's predecessor, was highly visible during the Ebola and Zika crises. But in this case, medical workers and the public were left to make sense of often-opaque postings on the C.D.C.'s website after its leadership stopped holding regular briefings on March 9.

"Right now, they only have the PDFs that are out there, without any kind of a conversation," said Dr. Jennifer Nuzzo, an epidemiologist at Johns Hopkins. "That is a real shortcoming."

Medical specialty and public health organizations have sometimes taken it on themselves to identify and highlight updates for their members.

"It would be awesome if C.D.C. could actually announce significant changes rather than bury it on their website and assume it is done," Jim Collins, Michigan's director of communicable diseases, complained to his colleagues in an email on Jan. 31.

The C.D.C., some medical workers complain, has provided limited guidance on how children transmit the virus, when to ventilate patients and how to prioritize use of isolation rooms. And it took until April 27 for the agency to expand its list of possible symptoms to include more than a dozen signs of illness that some medical specialty societies had reported weeks earlier.

To many anxious doctors and nurses, some of the C.D.C.'s clinical guidance often seemed driven by the nationwide shortages of personal protective equipment, not the best interests of health care workers.

Initially, the C.D.C. recommended that all doctors and nurses coming in contact with coronavirus patients wear N95 respirators, which filter out 95 percent of all airborne particles. But on March 10, with supplies dwindling,

the C.D.C. announced that less protective surgical masks were “an acceptable alternative” except during procedures that might aerosolize the virus. Days later, the agency said health workers could even wear “homemade masks (e.g., bandanna, scarf) for care of patients with COVID-19 as a last resort.”

“Mistrust crept in,” said Lori Freeman, chief executive of the National Association of County and City Health Officials. “‘Are we really being protected?’”

The relaxed guidance on protective equipment matched advice from the World Health Organization on surgical masks. But the C.D.C. did not highlight that fact in its update and gave no public explanation other than acknowledging the worsening shortages. An analysis published this week suggests that N95 and other respirator masks are superior to surgical or cloth masks in protecting medical workers against the virus.

Leaders of schools, businesses and other organizations also said they were confused by the C.D.C.’s advice, which sometimes conflicted with that of the White House coronavirus task force.

In one such instance on March 16, the White House urged limiting gatherings to no more than 10 people and “schooling from home whenever possible” for at least the next 15 days. But days earlier, the C.D.C. had recommended that schools close only if someone in the building tested positive or there was evidence of “substantial community transmission.”

On March 17, nearly 2,500 superintendents from around the country were hoping to get some clarity during an online seminar with the C.D.C. Why was the C.D.C. recommending most schools could remain open?

But just 40 minutes before the seminar was to start, the C.D.C. canceled it without explanation and never rescheduled. The agency later told reporters it had decided “to fully adapt to the new guidance from White House” before

addressing the superintendents.

In Miami Beach, densely packed with tourists, older residents and service workers, Mayor Dan Gelber dreads the prospect of new outbreaks. While he appreciated the reopening guidance that the C.D.C. published recently, Mr. Gelber, a Democrat, said he wished the agency would also lay out specific steps to follow if cases surge again.

“It’s almost as if they just said, ‘Open up and figure out whether it’s a good idea or not afterward,’” he said of the C.D.C. “We don’t have a net here.”

Noah Weiland contributed reporting.